

TABLE 12

SITE 7K-C-359 PREHISTORIC ARTIFACT SUMMARY

	Qtzte.	Qtz.	Chert	Jas.	Rhy.	Chal.	Total
Flakes	9(2)	30(8)	13(2)	79(21)	1	5	137(33)
Util. Flakes	---	---	1(1)	1	---	1	3(1)
Flake Tools	---	1	---	---	---	---	1
Other Bifaces	---	---	---	1	---	---	1
Misc. Stone Tools	1(1)	1(1)	1(1)	2(2)	---	---	5(5)
Shatter	---	11	---	---	---	---	11
Cores	---	---	1(1)	1(1)	---	---	2(2)
Total	10(3)	43(9)	16(5)	84(24)	1	6	160(41)
23 Fire-cracked rocks							
1 Hammerstone							
4 Clay fragments							
Total Count	%						
Quartzite	10(3)		6.25	KEY: Qtzte. - Quartzite Qtz. - Quartz Jas. - Jasper Rhy. - Rhyolite Chal. - Chalcedony Util. - Utilized Misc. - Miscellaneous () - Cortex			
Quartz	43(9)		26.90				
Chert	16(5)		10.00				
Jasper	84(24)		52.50				
Rhyolite	1		.60				
Chalcedony	6		3.75				
Total			100.00				

7K-C-362

7K-C-362 is located north of Dover within and adjacent to the proposed right-of-way east of Road 332 and south of Road 331 (Figure 2). The site is situated on a 20-foot sandy rise west of a small drainage of Dyke Branch. Soils in the vicinity of the site consist of well-drained sandy loam soils of the Sassafras series (Matthews and Ireland 1971). The entire area of the site has been plowed. Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing. The limits of the site and the location of all Phase II test units and features identified in relation to the proposed right-of-way appear in Figure 79.

Phase I Summary

7K-C-362 was first identified as the Lewis-E site during Phase I testing. Phase I testing consisted of a grid of shovel test pits across the rise which produced flakes, fire-cracked rocks, and one black chert stemmed point basal fragment. Because the physical characteristics of the site have been proven desirable to prehistoric populations in the region and because of the site's proximity to another prehistoric complex discovered by pedestrian survey, it was determined that the site was significant and potentially eligible for listing on the National Register of Historic Places. A Phase II survey was, therefore, recommended (Bachman et al. 1988).

TABLE 13

SITE 7K-C-359 DEBITAGE ATTRIBUTE FREQUENCIES

Flake Type		Platform Shape	
Complete	36	Triangular	15
Proximal	12	Flat	10
Medial	6	Round	23
Distal	6		
Cortex		Remnant Biface Edge	
Present	28	Present	1
Absent	32	Absent	59
Size (cm)		Platform Preparation	
<2	44	Present	11
>2, <5	16	Absent	37
>5	0		
Size (mm)		Scar Count	
<10	12	Mean =	2.98
>10, <15	19	Std. Dev. =	1.31
>15, <20	13		
>20, <25	8		
>25, <30	4		
>30, <35	3	Directions Count	
>35, <40	0	Mean =	2.05
>40, <45	1	Std. Dev. =	.90
>45	0		

TABLE 14

MACRO-BAND BASE CAMP ATTRIBUTES (Custer and Bachman 1984)

Attribute	Present	Absent	Abundant	Scarce
living structure	x			
hearths	x			
storage features	x			
specialized tool production areas	x			
early stage bifaces				x
early stage debitage				x
late stage bifaces			x	
late stage debitage			x	
rejected tools				x
discarded tools				x
spatial segregation of tool production activities	x			
processing features and activity areas		x		
specialized ground stone tools				x
caches	x			
ceramics			x	

FIGURE 79
 Site 7K-C-362 -
 Site Limits and Location of all Phase II Tests

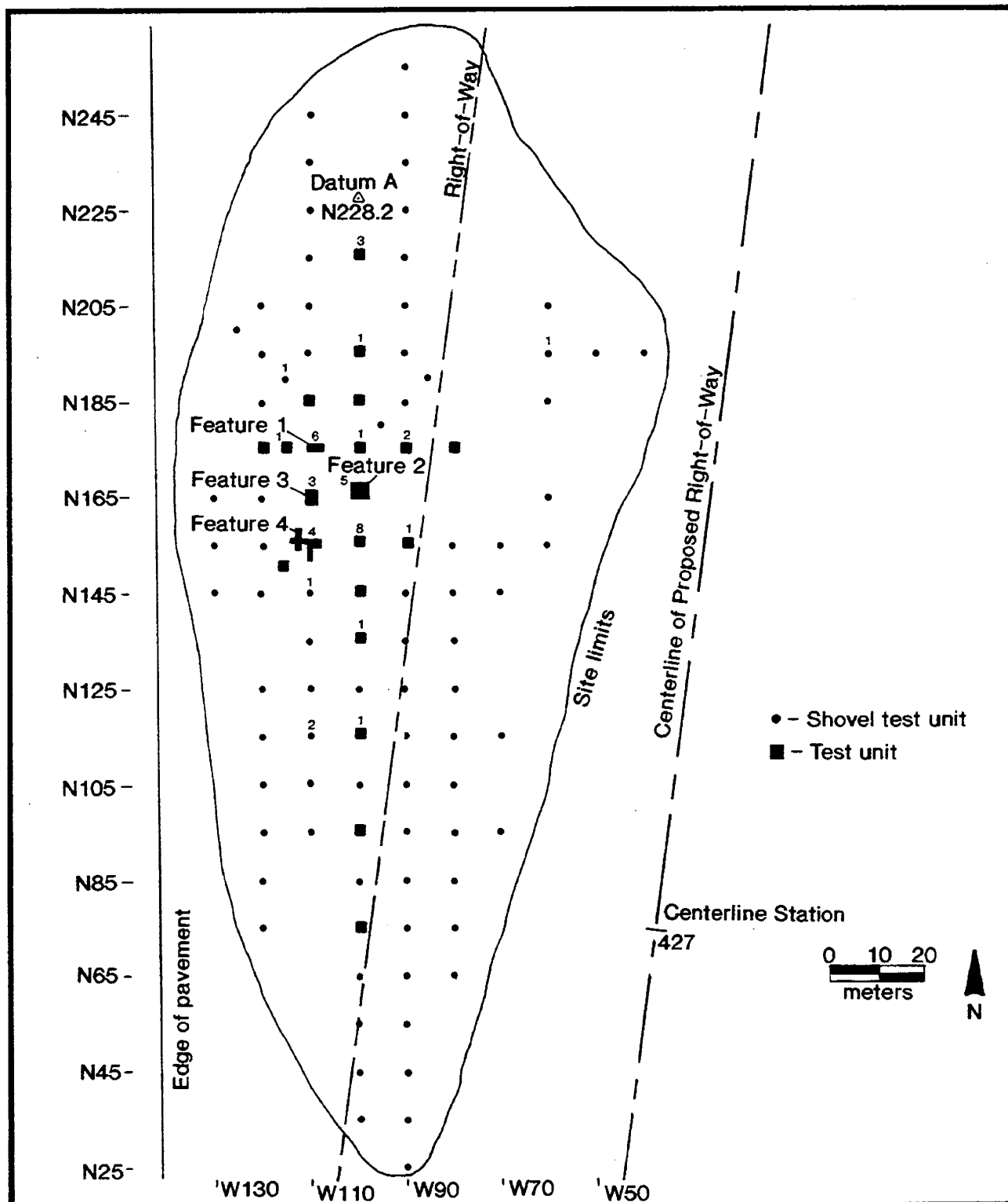
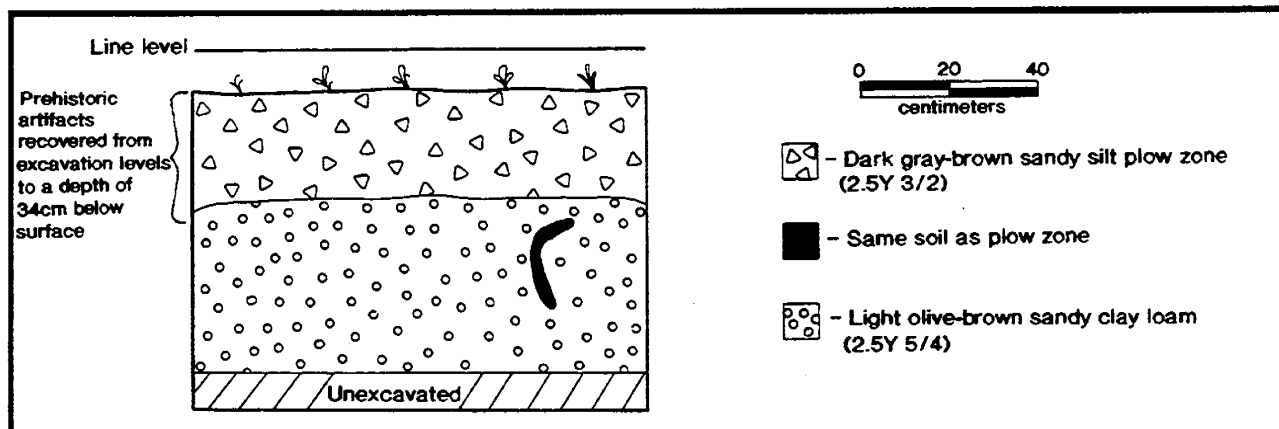


FIGURE 80

Site 7K-C-362 – Representative Profile from the South Wall of Test Unit N175W100



Phase II Results

Phase II testing consisted of 31 1m x 1m test units plus additional units necessary to expose features and 80 shovel test pits. The limits of the site and the location of all features identified by Phase II testing appear in Figure 79. Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing until no prehistoric artifacts were recovered. Thus, the area marked on Figure 79 as the limit of Phase II testing corresponds to the boundaries of the site. The core of the site was largely confined to an area extending north from the N135 line to N195 and west from the W90 line to W120 (Figure 79). A representative soil profile taken from the south wall of Test Unit N175W100 shows a dark gray-brown sandy silt plow zone underlain by light olive-brown sandy clay loam subsoil (Figure 80). In the course of Phase II excavations, four features were discovered, two of which were determined to be non-cultural (Features 1 and 3) and two of which were thought to be historic (Figure 79). Of the historic features, Feature 2 was determined to be a well and Feature 4 a root cellar. Thus, no prehistoric cultural features were identified. More comprehensive discussion of the historic component of the site appears in Grettler et al. (1991a).

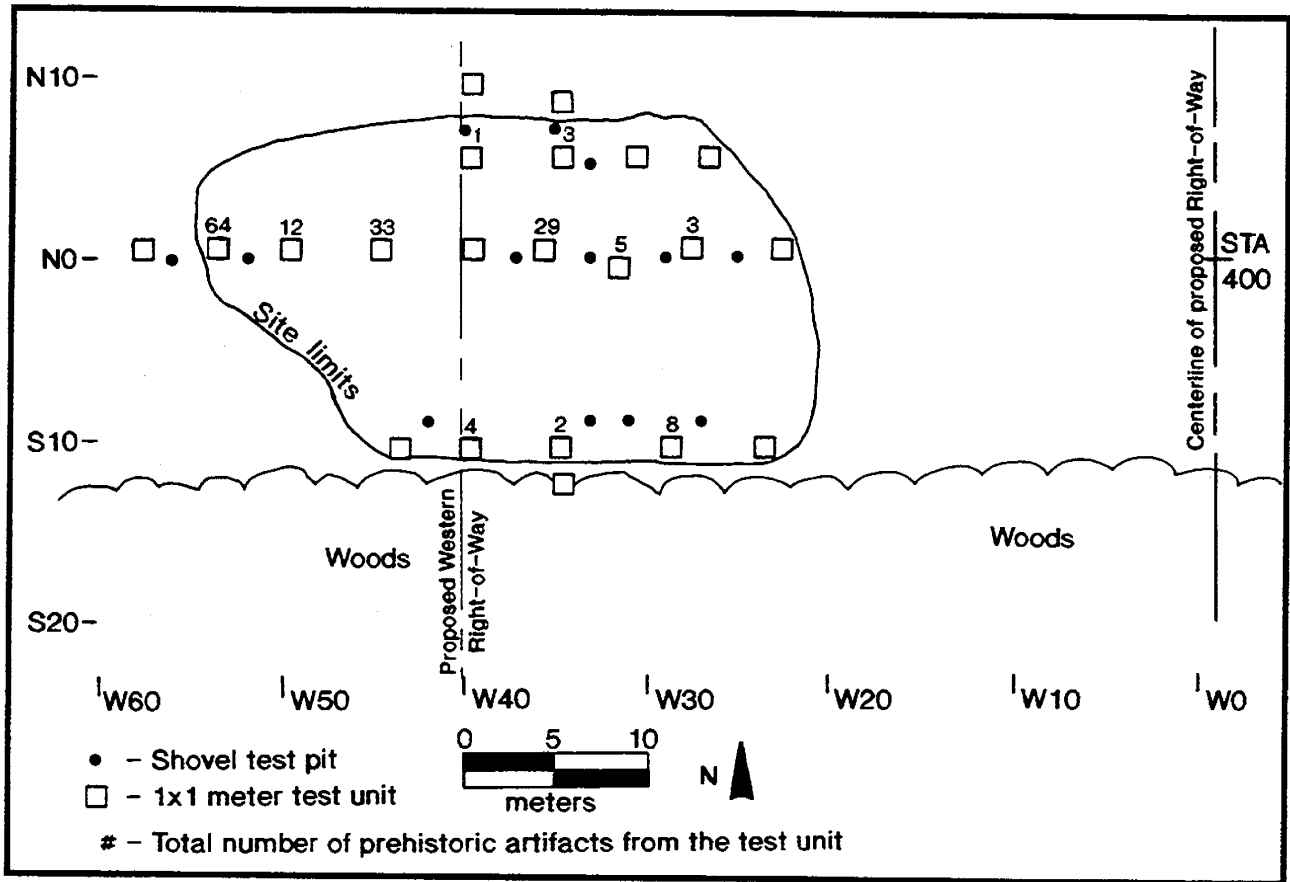
A total of 65 prehistoric artifacts were recovered from Phase II testing, consisting largely of flakes and fire-cracked rocks as well as one jasper late stage biface reject and two pieces of quartz shatter. The majority of prehistoric artifacts (63%) were recovered from the plow zone (Figure 79). The prehistoric artifact assemblage is dominated by jasper flakes, only one of which exhibited cortex. The near absence of cortex suggests that they were derived from cores of primary jasper rather than cobble cores and/or as a result of tool refurbishing. In terms of the entire flake assemblage, however, cortex is present on 21 percent suggesting that some secondary cobble resources were also being utilized. Fire-cracked rocks represent 38 percent of the total assemblage with a large concentration recovered from the vicinity of Feature 4 (Figure 81) which also contained the late stage biface reject. The quantity of prehistoric cultural materials recovered from the site and their spatial and temporal distribution indicates an ephemeral occupation at which time lithic reduction, probably in preparation of procurement activities, must have taken place.

The overwhelming number of artifacts recovered from this site, however, numbering upwards of 3,000, dated to the late eighteenth and early nineteenth centuries. The two historic features which were located confirmed that 7K-C-362 was properly an historic site and it was recommended for Phase III mitigation (Grettler et al. 1991a). A more complete discussion of the Phase II survey of the historic component of 7K-C-362 (Lewis-E site) appears in Grettler et al. (1991a).

Site 7K-C-362 - Concentration of Fire-Cracked Rock



FIGURE 82
Site 7K-C-363 -
Site Limits and Location of all Phase II Tests



Conclusions and Recommendations

The meager artifact recovery of the prehistoric component, the absence of prehistoric features, and the disturbance to site integrity from the historic occupation, plowing, and erosion compromise any further potential significance of the site. Therefore, 7K-C-362 is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended for the prehistoric component of the site. Further work, however, is recommended for the historic component as discussed more fully in Grettler et al. (1991a).

7K-C-363

7K-C-363 is located north of Dover along the proposed right-of-way between Road 88 to the southeast and Road 332 to the north (Figure 2). The site is unplowed and is situated on a gentle rise in a wooded lot surrounded by poorly- drained areas west of a low order tributary of Muddy Branch. The surrounding terrain consists of silty loam soils of the Othello series (Matthews and Ireland 1971). Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing. The limits of the site and the location of all Phase II test units in relation to the proposed right-of-way appear in Figure 82.

TABLE 15

SITE 7K-C-363 PREHISTORIC ARTIFACT SUMMARY

	Qtzte.	Qtz.	Chert	Jas.	Arg.	Chal.	Total
Flakes	7	17 (4)	50 (9)	50 (15)	2	4	130 (28)
Flake Tools	---	---	---	---	---	1	1
Misc. Stone Tools	---	1	---	---	---	---	1
Other Bifaces	---	---	---	1	---	---	1
Total	7	18 (4)	50 (9)	51 (15)	2	5	133 (28)
Total Count						%	
Quartzite	7			5.30			
Quartz	18 (4)			13.50			
Chert	50 (9)			37.60			
Jasper	51 (15)			38.30			
Argillite	2			1.50			
Chalcedony	5			3.80			
Total						100.00	

KEY:

Qtzte. - Quartzite
 Qtz. - Quartz
 Jas. - Jasper
 Arg. - Argillite
 Chal. - Chalcedony
 () - Cortex

31 Fire-cracked Rocks

Phase I Summary

Phase I testing consisted of a series of shovel test pits at 40-foot intervals running perpendicular to the proposed right-of-way. This site was identified in Shovel Test Pit 14-81, which was placed outside of the right-of-way 30 feet southwest of its western border. Excavation produced 11 very high quality quartzite and jasper flakes. Because of the high quality of the materials in an area devoid of primary sources for such materials, it is likely that some type of long-distance transport or trade activities were taking place in the area of the site. Because of this likelihood, and because prehistoric cultural materials were located in a landscape with predicted site potential only 30 feet outside of the right-of-way in undisturbed soils, it was determined that Phase II testing was warranted to determine the presence and significance of any site that may be impacted by the proposed right-of-way (Bachman et al. 1988).

Phase II Results

Phase II testing consisted of 21 1m x 1m test units and 13 shovel test pits (Figure 82). A summary catalog of prehistoric artifacts recovered from the site is shown in Table 15. No features were located and the site was confined to a core area extending from the S9 line to N5 and from the W28 line to W54. The major concentration was along the N0 line in three areas (Test Units N0W54, N0W45, and N0W35) (Figure 82).

Figure 83 shows a soil profile of Test Unit N0W54. The upper 10 cm of soil consisted of the organic humus layer. Beneath this layer was a stratum of yellow-brown sandy loam extending approximately 30 cm in depth. Underlying this layer was a stratum of orange-brown sandy loam to a depth of 50 cm below surface. Below this horizon was another cultural level consisting of orange sand and extending in depth to 90 cm below surface where a culturally sterile level of orange sand mottled with gray sand was reached. No pebbles or gravels were observed in any of the strata, indicating that erosion was not a problem at the site. The profile suggests good site integrity. Prehistoric artifacts from this unit consisted of chert and jasper flakes, one chalcedony and one quartz flake tool, and nine fire-cracked rocks, which were recovered from levels to a depth of 90 cm below surface. Only one artifact was found in Level 1 (0-10 cm), but artifacts were more or less equitably distributed in Levels 2, 3, 4, and 5 with fewer artifacts observed in Levels 6 and 7, and one each found in Levels 8, 9, and 10 for a total of 64 artifacts. The largest concentration of artifacts in Test Unit N0W54 was located in Level 3 (20-30 cm below ground surface). Forty-one percent of the total flakes from the site were recovered from this unit which lies approximately 14 meters west of the western edge of the right-of-way.

Figure 83 shows a profile of Test Unit N0W45. This profile shows an organic humus layer contained in the upper 10 cm of the unit. Beneath this layer is a stratum of yellow-brown sandy loam containing scattered flecks of charcoal and extending to a depth of 48 cm below ground surface. Between this level and a sterile stratum of orange clayey sand is a thin interface layer of yellow to orange-brown clayey sand. No pebbles or gravels were observed throughout the stratigraphy. Prehistoric artifacts were found in levels down to 54 cm below ground surface. Several more flakes and a concentration of 20 fire-cracked rocks were located in the unit. All of the fire-cracked rocks were located in Level 3 (20-30 cm below ground surface) and may signify a hearth area. This unit lies just 5 meters west of the western edge of the right-of-way.

Figure 83 shows a profile of Test Unit N0W35. The upper 10 cm of the profile consisted of an organic humus layer. The next 64 cm of subsoil consisted of yellow-brown sandy loam. Numerous tree roots were encountered in the excavation of this horizon, and the possibility therefore exists that some translocation of artifacts through the profile may have resulted. Beneath this horizon, the soil graded into yellow to orange-brown sandy loam for approximately 8 cm and, finally, to a clay loam from approximately 72 cm below ground surface. No pebbles or gravels were observed. Cultural materials recovered from levels to a depth of 64 cm consist of several chert and jasper flakes and one each of quartz and quartzite. The majority of artifacts from this unit were also located in Level 3 (20-30 cm below ground surface) although artifacts were found in Levels 2 through 6 (20 cm to 60 cm below ground surface).

The only potential cultural feature identified at the site was a possible hearth in N0W54; no other cultural features were located in these core units or in any other area of the site. Furthermore, no diagnostic artifacts were identified at the site. The lack of diagnostic time-markers precludes the possibility of dating the occupation of the site. Additional artifacts identified from across the site include a jasper point tip from S9W29, quartz, quartzite, and argillite flakes in addition to those made from cryptocrystalline materials, and fire-cracked rocks. The presence of non-local materials in the assemblage indicates the likelihood that the occupation post-dates the Paleo-Indian Period. The presence of cortex (21%) on the debitage is consistent with embedded procurement practices which also largely post-date the Paleo-Indian Period in this region (Custer 1984a:65).

An attribute test conducted on debitage from this site failed to distinguish a clear preference in lithic utilization practices although a slight emphasis on biface reduction is indicated (Table 16; Appendix II). Instead, the results of the test on a sample of 60 flakes seem to show mixed utilization of prepared biface and cores in relatively equivalent numbers. For example, in terms of flake type, although approximately 52 percent of the flakes in the sample are complete flakes, which is an indicator of core reduction, 48 percent are broken, which is a common consequence of biface reduction. 7K-C-363 shows a greater absence than presence of cortex as would be expected from late stage biface reduction, but there is also a relatively strong presence of cortex which may indicate cobble core reduction. With regard to flake size, the overwhelming majority of flakes in the sample measure less than 2 cm, a characteristic commonly associated with bifacial reduction. However, flakes produced by cobble core reduction would also likely be small. The number of flake scars does not show a clear indication of one type of utilization over another, although the number of directions is generally indicative of biface reduction. In general, the numbers seem to support the theory of mixed utilization. In terms of platform shape, there was a

FIGURE 83
Site 7K-C-363 -
Profiles of Test Units NOW54, NOW45 and NOW35

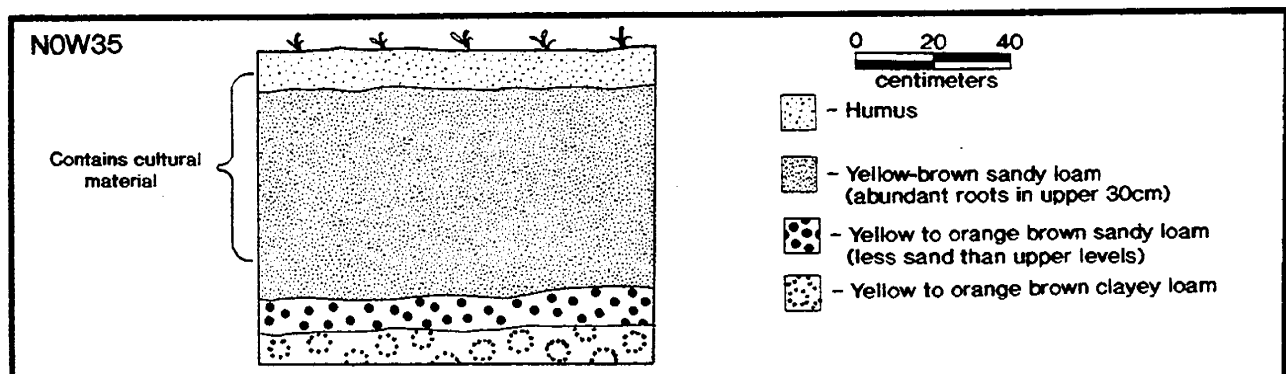
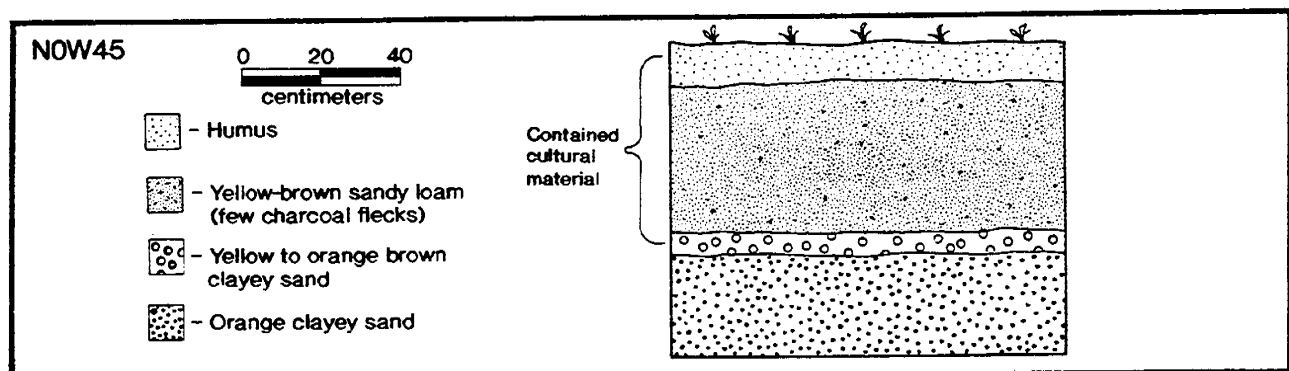
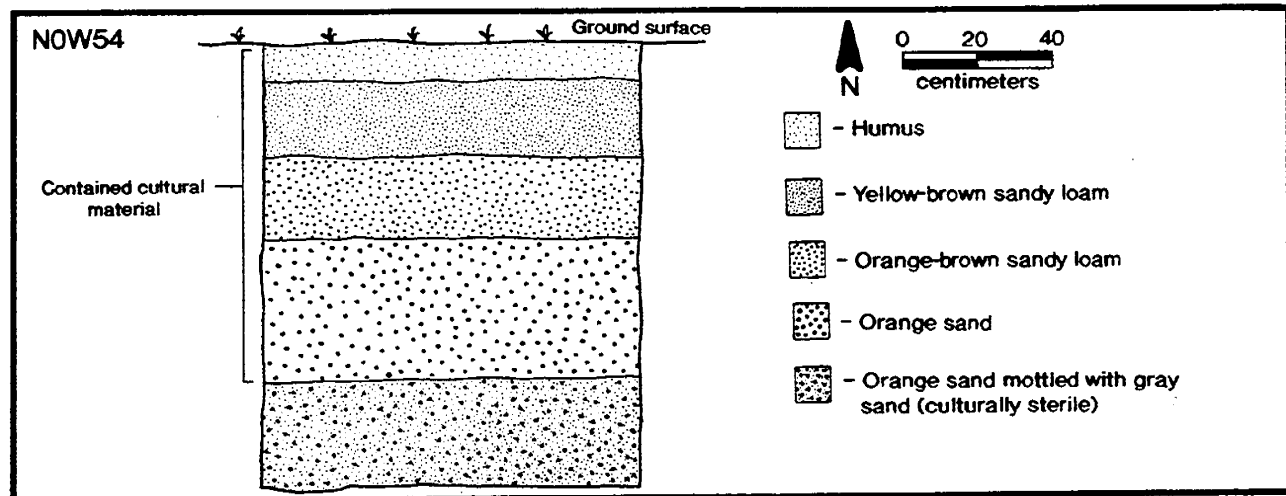


TABLE 16

SITE 7K-C-363 DEBITAGE ATTRIBUTE FREQUENCIES

Flake Type		Platform Shape	
Complete	31	Triangular	15
Proximal	7	Flat	8
Medial	7	Round	15
Distal	15		
Cortex		Remnant Biface Edge	
Present	18	Present	0
Absent	42	Absent	60
Size (cm)		Platform Preparation	
<2	56	Present	2
>2, <5	4	Absent	36
>5	0		
Size (mm)		Scar Count	
<10	22	Mean =	2.50
>10, <15	57	Std. Dev. =	1.13
>15, <20	15		
>20, <25	7	Scar Direction	
>25, <30	0	Mean =	1.70
>30, <35	0	Std. Dev. =	.71
>35, <40	0		
>40, <45	0		
>45	0		

much higher incidence of triangular shaped platforms which are associated with biface reduction than flat platforms which are associated with core reduction. However, there was also a high incidence of round platforms which have been associated with decortication activities. There is a complete absence of remnant biface edge on the sample flakes and a very low presence of platform preparation. A notable presence of these attributes would be a strong indicator of biface reduction; however, no particular conclusions can be drawn from the absence of these attributes. Overall, the data supports a theory of mixed utilization and at least a supplemental reliance on local cobble cores.

Lithic artifacts from this site were also subjected to blood residue analysis using the chemstrip testing method as described by Custer et al. (1988) and the results are summarized in Table 17. The analysis is used to determine the presence of hemoglobin on the tools and the test measures presence or absence of blood but not species. The goal is to use this technique to aid in determining whether animal butchering was practiced at the site. Soil, pebble, and gravel samples were tested to control for the possibility of contamination at the site. Eighty-two of the 84 soil tests on 28 control samples were negative, indicating that contamination was not a problem at the site. Two of the tests from one of the soil samples from Test Unit N5W40 registered a reaction, although it was not a full positive reaction. No artifacts from this test unit were tested. Two tools from the site and 21 pieces of debitage were tested. The tests were occasionally applied to more than one location on each artifact, thus a total of 28 individual tests were conducted on 23 artifacts. Both of the tools tested negative as well as 18 of the 21 pieces of debitage. Some reaction, although not a full positive result, was obtained from one flake from Level 2 of Test Unit N0W45, one flake from Level 5 of Test Unit N0W35, and one flake from Level 3 of Test Unit N5W31. It is possible then that some butchering may have been conducted at the site although the evidence is not conclusive.

TABLE 17

SITE 7K-C-363 SUMMARY OF BLOOD RESIDUE ANALYSIS

Sample Type	Number of Samples	Number of Tests Conducted on all	Number of Samples Showing +Reaction	Number of Samples Showing -Reaction	Number of Samples Showing ~+Reaction
Control (Soils, pebbles, gravels)	28	84	0	27	1
Debitage	21	25	0	18	3
Tools	2	3	0	2	0

In sum, the soil profiles from the site indicate that the context has not been disturbed. However, no cultural features or diagnostic artifacts were located inside the right-of-way during the Phase II survey. The artifact assemblage, dominated by flakes but also including a broken biface tip, indicates that tool production and refurbishing, perhaps in association with procurement activities, took place at the site. The site's location on a rise in a woodlot surrounded by poorly drained terrain provides an ideal context for procurement in all periods of prehistory. However, the absence of diagnostic artifacts and features makes any definitive determination about the site's function premature.

Conclusions and Recommendations

The presence of cultural materials in intact subsoil contexts, including a possible hearth, indicate that 7K-C-363 holds high potential for significance. However, the area of the site with the greatest potential for significance lies outside of the right-of-way, and therefore beyond the present zone of impact. This area of the site (located to the west of the right-of-way) is considered potentially eligible for listing on the National Register of Historic Places. Should the integrity of the site be compromised by future proposed construction, it is recommended that a Data Recovery Plan be prepared. The area of the site within the right-of-way, however, contains insufficient cultural materials to suggest high potential for significance. Therefore, this part of the site (inside the right-of-way), is not considered eligible for listing on the National Register of Historic Places, and no further work is recommended.

7K-C-364

7K-C-364 is located north of Dover along the edge of the proposed right-of-way northwest of Dover Downs Racetrack and west of Road 88 (Figure 2). The limits of the site and the location of all Phase II test units and features identified in relation to the proposed right-of-way appear in Figure 84. Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing. Thus, the area marked on Figure 84 as the boundaries of the site correspond to the limits of Phase II testing.

7K-C-364 consists of two components. The first component lies within the proposed right-of-way and extends 12 meters west of the western border of the right-of-way in a zone of potential impact by the planned highway construction. The second component is located further west and outside of the right-of-way. The site is situated in a wooded lot adjacent to Muddy Branch and consists of alternating areas of well-drained sandy rises and poorly drained low areas. The surrounding terrain consists of silty loam soils of the Othello series (Matthews and Ireland 1971). The site appears to have been previously cultivated.

FIGURE 84

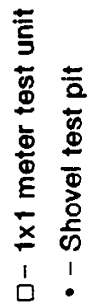
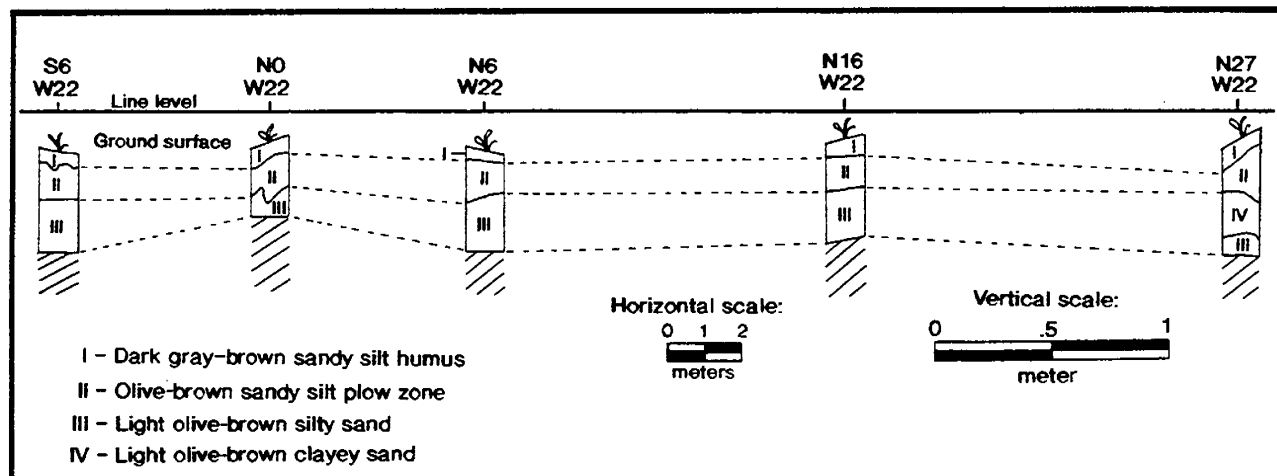


FIGURE 85

Site 7K-C-364 - W22 Transect, Soil Profiles (Eastern Half of Site)



Phase I Summary

Phase I research consisted of systematic shovel testing in well-drained areas and a mixture of shovel testing and auguring in the low areas. Shovel Test Pits 14-33 through 14-35, which comprise this site, were located on a low sandy terrace and produced flakes from each pit. In addition, two lines of shovel test pits were placed perpendicular to the above loci and the right-of-way and up a slope to a second terrace stretching outside of the right-of-way. These tests produced fire-cracked rock, debitage, a unifacial tool, a bifacial tool, and one core. The presence and nature of the artifact assemblage indicates that the site has the potential to yield significant data to prehistory. For this reason, and in order to ensure that construction will not compromise any site that may exist on the edge of the right-of-way, it was determined that Phase II testing was warranted (Bachman et al. 1988).

Phase II Results

This site will be considered in terms of two components. The eastern component lies within the proposed right-of-way and extends 12 meters west of the western border of the right-of-way in a zone of potential disturbance by the proposed highway construction. The western component is located further west and outside of the right-of-way. The limits of the site and the location of all Phase II tests and features identified by the Phase II testing appear in Figure 84.

The eastern component lies within the right-of-way and sensitive zone and extends from the N50 line to the S20 line and from the W7 line to the W55 line. Phase II testing in this area consisted of 42 1m x 1m test units and 48 shovel test pits (Figure 84). Figure 85 shows a transect of test units along the W22 line. This transect represents a typical profile of this component of the site and shows a very thin organic humus layer underlain by a plow zone of olive-brown sandy silt. Beneath this horizon lie lighter olive-brown silty sands, probably of Holocene deposition. In the northernmost unit of the transect, N27W22, the terrain takes an upward slope which introduces an intrusive layer of light olive-brown clayey sand in between the plow zone and the light olive-brown silty sand subsoil. This eastern component of the site, then, seems to have been previously cultivated and to have experienced some Holocene deposition from aeolian processes as well as slope wash. No gravels or pebbles appeared in the excavated levels.

No prehistoric cultural features were located in the eastern component of the site. However, three features (Features 3, 4, and 5), determined to be historic, were located in the excavation of Test Unit N6W29 (Figure 86). These features each measured approximately 30 cm in diameter and 20 cm in depth and may represent historic post

FIGURE 86

Site 7K-C-364 – Plan View and Profile of Features 3, 4, and 5, and East Wall Profile of Test Unit N6W29

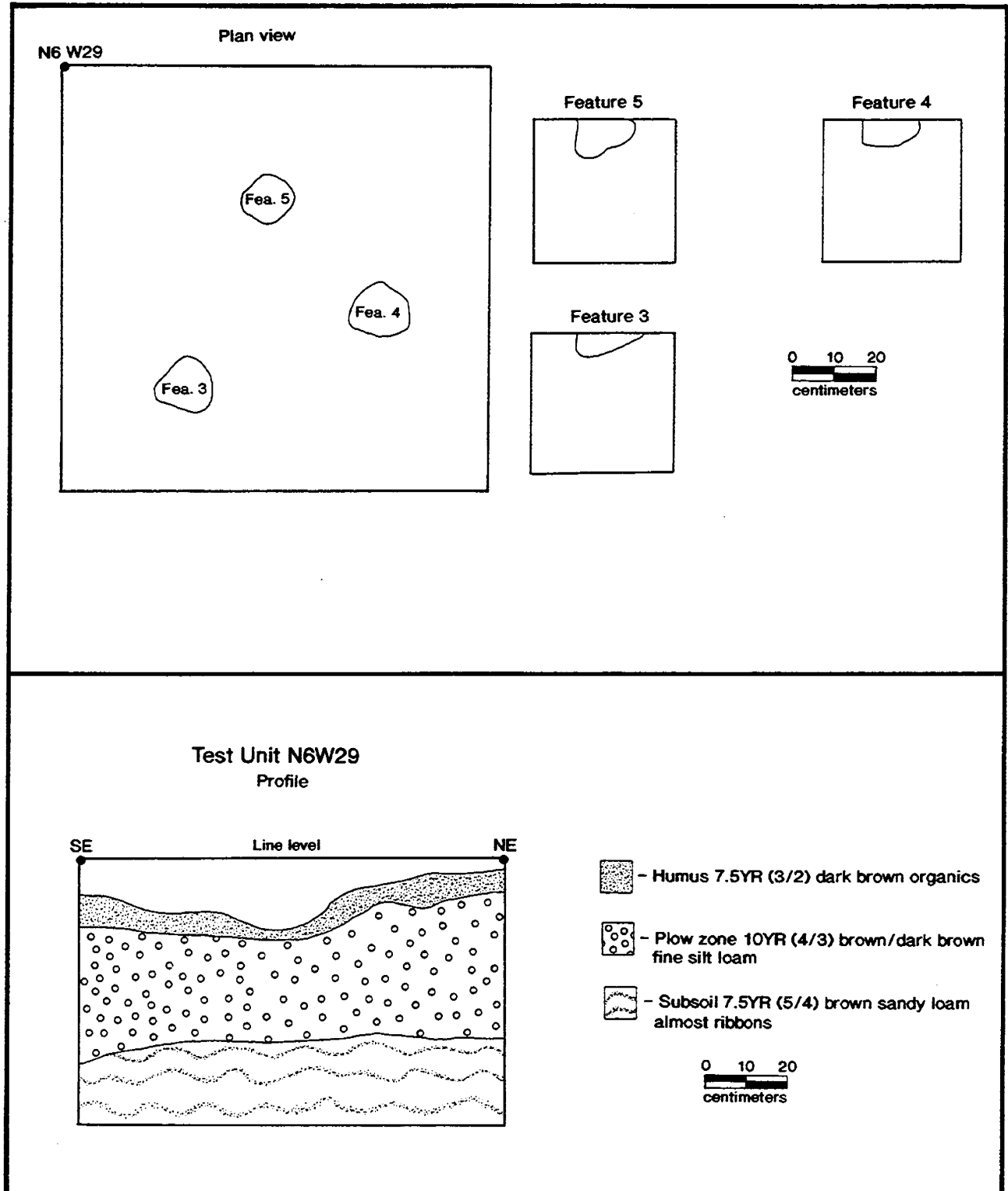
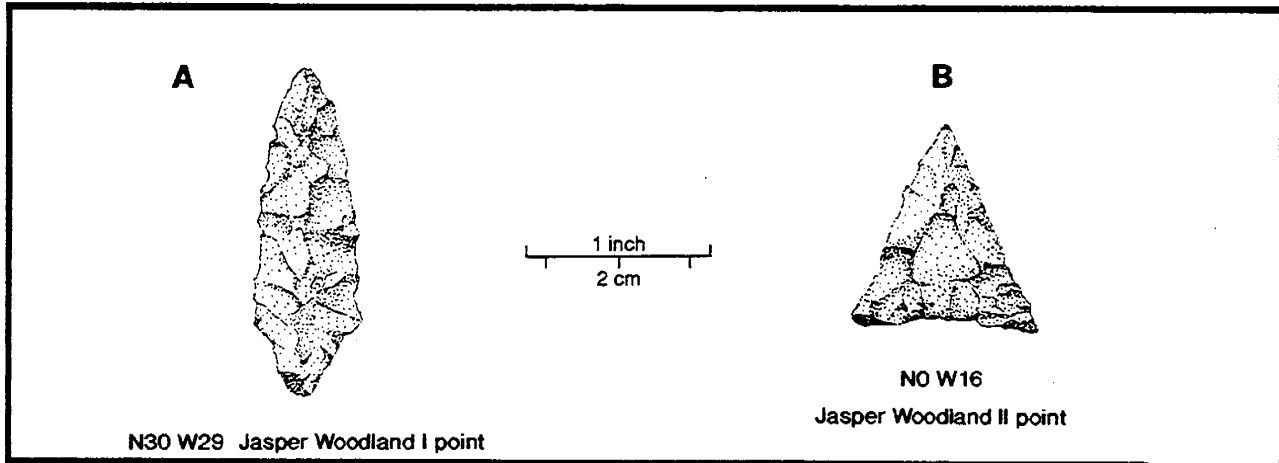


FIGURE 87

Site 7K-C-364 – Diagnostic Projectile Points



holes. The only prehistoric cultural materials contained in the unit were three jasper flakes from the humus and plow zone layers.

Two diagnostic lithic artifacts were recovered from the eastern component of the site. The first was a well-resharpened contracting stem point associated with the Woodland I Period made from jasper with a small patch of cortex on the base (Figure 87-A). This point was found in Level 3 of Test Unit N30W29. The second diagnostic artifact was a well-resharpened thin triangular point, also made of jasper, which is associated with the Woodland II Period (Figure 87-B). This point was found in Level 3 of Test Unit N0W16. In addition, Level 1 of Test Unit N32W30 contained a Marcey Creek ceramic sherd tempered with steatite and associated with the Clyde Farm and Barker's Landing complexes of the Woodland I Period. In addition to diagnostic artifacts, fire-cracked rocks were also found in scatters across the eastern component of the site (Figure 88) as were numerous flakes, utilized flakes, flake tools, scrapers, and non-diagnostic biface fragments and cores. A summary catalog of prehistoric artifacts recovered in Phase II testing is shown in Table 18. Seventy-two percent of the artifacts from this component were located in the humus and plow zone levels; the remainder were located in subsoil contexts to a depth of approximately 65 cm below ground surface.

The western component lies outside and to the west of the right-of-way and extends from the N45 line to the S2 line and from the W67 line to the W121 line. Phase II testing in this zone consisted of 19 test units and 43 shovel test pits (Figure 84). Figure 89 shows the soil profiles for the N40 shovel test pit line in this western component of the site. The profile shows that the three easternmost shovel test pits exhibit both a humus layer of organic rich material and a plow zone of dark brown sandy silt underlain by a yellow-brown silty sand subsoil. The three westernmost shovel test pits, however, do not appear to have a plow zone. This difference in the profile may indicate that the eastern half of the N40 line was previously cultivated and then left fallow until new woodland growth began, resulting in both a plow zone and humus layer and that the western half had not been previously cultivated but instead has existed as woodland continuously. On the other hand, since the western half of the line lies on an upper plateau of a slope, the difference may be explained by slope wash which may have obliterated the plow zone. Shovel Test Pit N40W103 appears in the transition zone and although it does not seem to have a plow zone, it has a deep humus layer which may contain a remnant plow zone. On the other hand, this shovel test pit is located just five meters north of a feature (Feature 2) and the deep humus layer may be related to that feature. Three flakes were recovered from Shovel Test Pit N40W103. Two features were located during the Phase II testing in the western component of the site. Feature 1 was located in Test Units N35W81 and N35W82, and Feature 2 was located in Test Units N34W103, N35W102, and N35W103 (Figure 84).

FIGURE 88
Site 7K-C-364 - Concentration of Fire-Cracked Rock

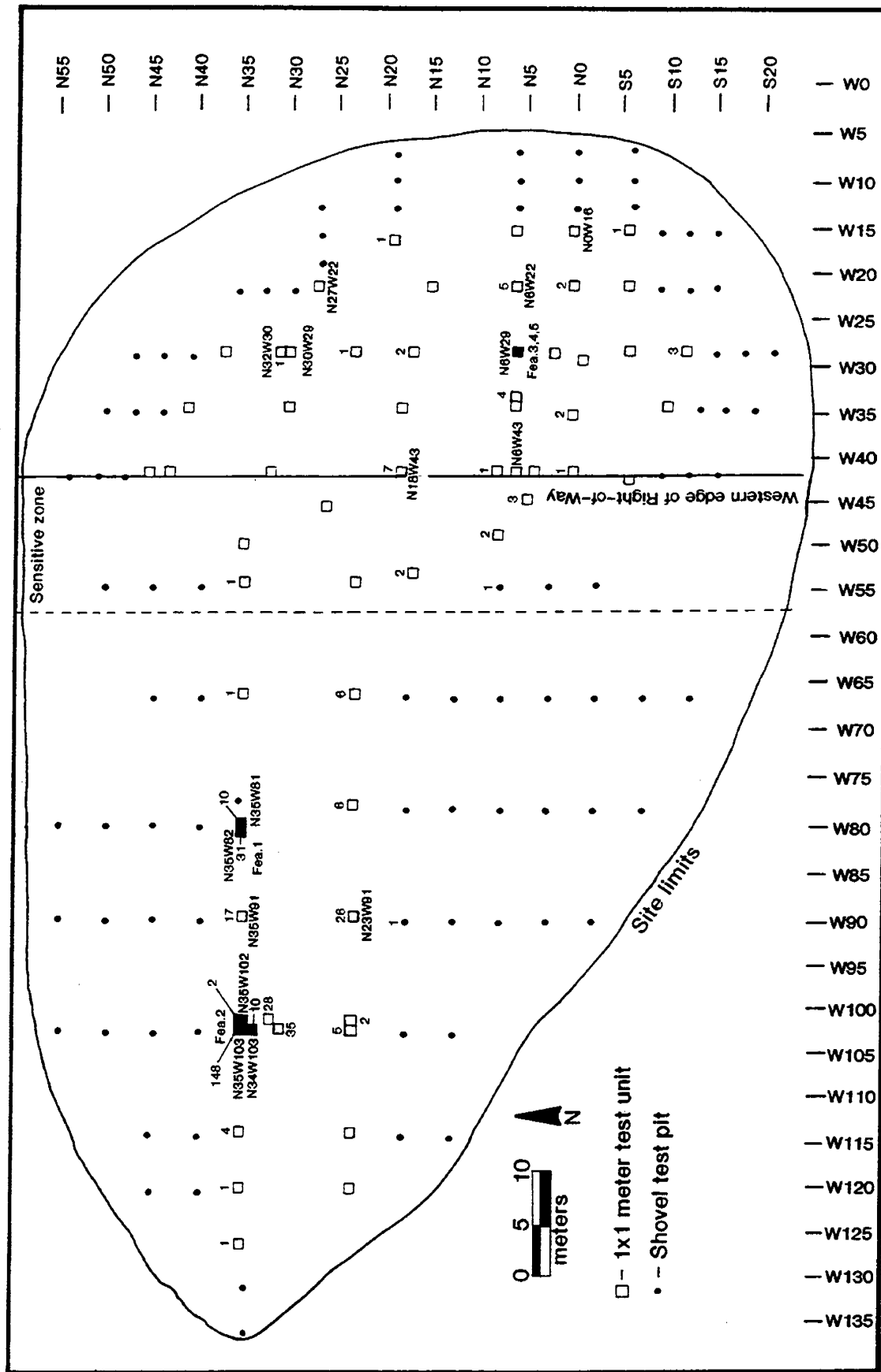


TABLE 18

SITE 7K-C-364 PREHISTORIC ARTIFACT SUMMARY

	Qtzte.	Qtz.	Chert	Jas.	Rhy.	Arg.	Ir.	Chal.	Schist	Other	Total
Flakes	119(23)	528(139)	326(99)	588(253)	21(1)	42	4	17(7)	2	2(1)	1649(523)
Util. Flakes	---	6(3)	5(1)	15(7)	---	---	---	---	---	---	26(11)
Flake Tools	---	3(2)	1	3(1)	---	---	---	---	---	---	7(3)
Woodland I	---	---	---	---	---	---	---	---	---	---	---
Points	---	5	---	3	---	1	---	1(1)	---	---	10(1)
Woodland II	---	---	---	---	---	---	---	---	---	---	---
Points	---	---	---	2	---	---	---	---	---	---	2
ESBR	---	---	1	1	---	---	---	---	---	---	2
Other Bifaces	2	---	5(1)	4(1)	---	---	---	1	---	---	12(2)
Scrapers	---	2	3(3)	6(3)	---	---	---	---	---	---	11(6)
Shatter	---	4	---	---	---	---	---	---	---	---	4
Cores	2(1)	7(5)	1(1)	9(8)	---	---	---	---	---	---	19(15)
Total	123(24)	555(149)	342(105)	631(273)	21(1)	43	4	19(8)	2	2(1)	1742(561)

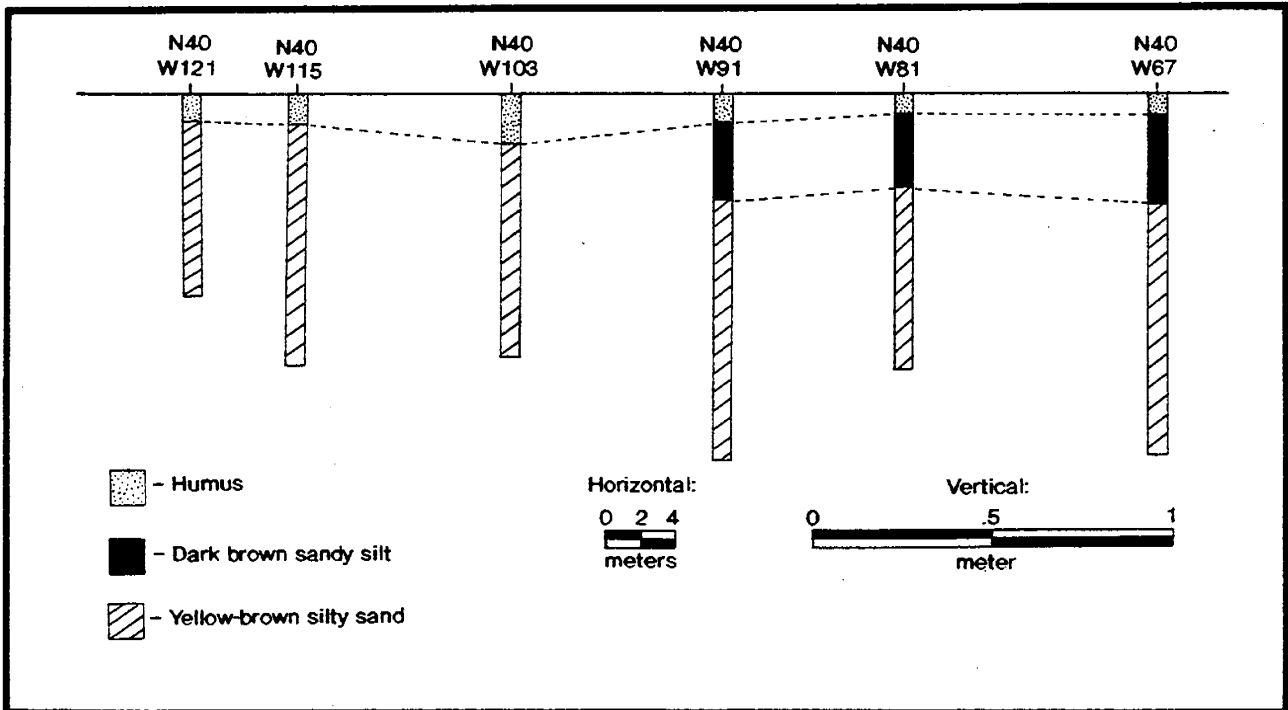
Total Count

Lithics	#	%	Non-Lithics
Quartzite	123(24)	7.10	1 Hammerstone
Quartz	555(149)	31.90	393 Fire-cracked rocks
Chert	342(105)	19.60	1 Mockley ceramic
Jasper	631(273)	36.20	2 Minguannan ceramics
Rhyolite	21(1)	1.20	3 possible Minguannan ceramics
Argillite	43	2.50	1 possible Wolfe Neck ceramic
Ironstone	4	.20	1 shell tempered ceramic
Chalcedony	19(8)	1.10	1 steatite tempered ceramic

FIGURE 89

Site 7K-C-364 –

N40 Transect, Soil Profiles (Western Half of Site)



Feature 1 was discovered approximately 50 cm below ground surface in the southwest corner of Test Unit N35W81 and appeared as an amorphous dark stain (Figure 90). Test Unit N35W82 was then opened up to chase Feature 1 which was encountered approximately 40 cm below ground surface in that test unit (Figure 90). The northern half of the feature was then excavated in four levels labeled A through D (Figure 91). Level A, approximately 40 cm below surface, appeared to be root and rodent disturbed. Level B was determined to be a lens within level A and extended 5 cm deep. Level C, approximately 45 cm below surface, appeared as a tunnel-like feature approximately 5 cm in diameter running in a northerly direction near the west wall of Test Unit N35W81 and extending between 60 cm and 77 cm below surface. This tunnel appeared to be a non-cultural rodent disturbance. Level D lies approximately 5 cm below Level A and appeared as a semi-circular feature which continued to the bottom of the unit and was probably another rodent chamber with tunnels. The integrity of Feature 1, therefore, may have been compromised by root and rodent activity.

Feature 1 produced 42 percent of the total artifacts recovered from the western component of the site, including 35 percent of the total flakes. In addition, utilized flakes, flake tools, cores, bifaces (Figure 92), a fire-cracked rock concentration, grit and shell tempered ceramics, and pieces of fired clay with grit temper were also recovered. Diagnostic artifacts from the feature and its vicinity include one quartz point from Level 2 of Test Unit N35W81 (Figure 92-A), one quartz point from Level 4 of Test Unit N35W82 (Figure 92-B), one jasper point stem from Level 3 of Test Unit N35W82, and one jasper stemmed point from Level 5 of Test Unit N35W82 (Figure 92-I), all dating to the Woodland I Period, and one jasper Woodland II point from Level 2 of Test Unit N35W82. A jasper point tip was also found in the bottom of the plow zone above the feature (Figure 92-C).

Feature 2 is composed of Test Units N35W103, N35W102, and N34W103 (Figure 84). While excavating Test Unit N35W103, a concentration of fire-cracked rock was encountered at approximately 37 cm below surface (Figure 93). After the 6 cm deep culturally sterile humus layer was removed, Level 2 was started with the anticipation that a plow zone would be found. However, no plow zone was found and excavation in natural levels

FIGURE 90

Site 7K-C-364 – Plan View of Feature 1

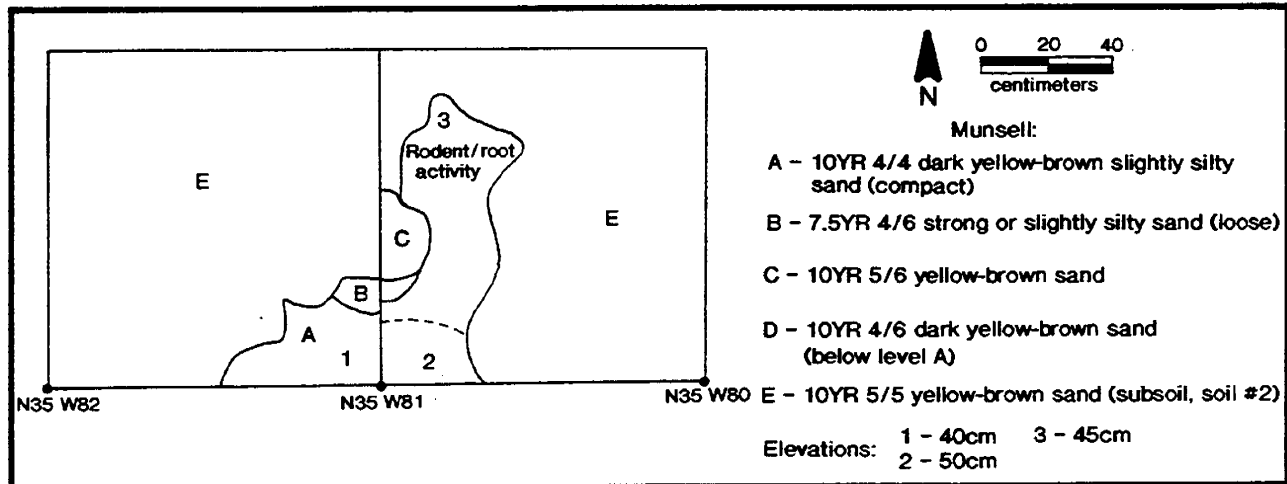


FIGURE 91

Site 7K-C-364 – Profile of Feature 1

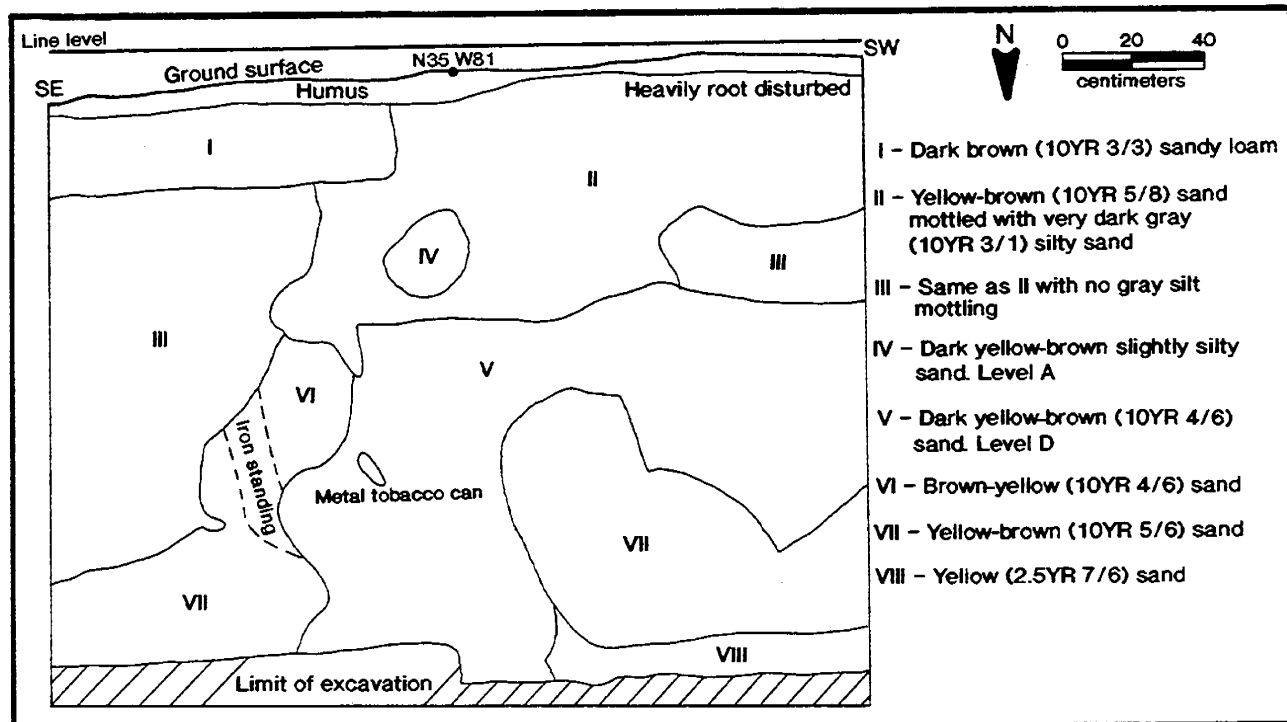


FIGURE 92
 Site 7K-C-364 -
 Sample of Tools Recovered from Feature 1

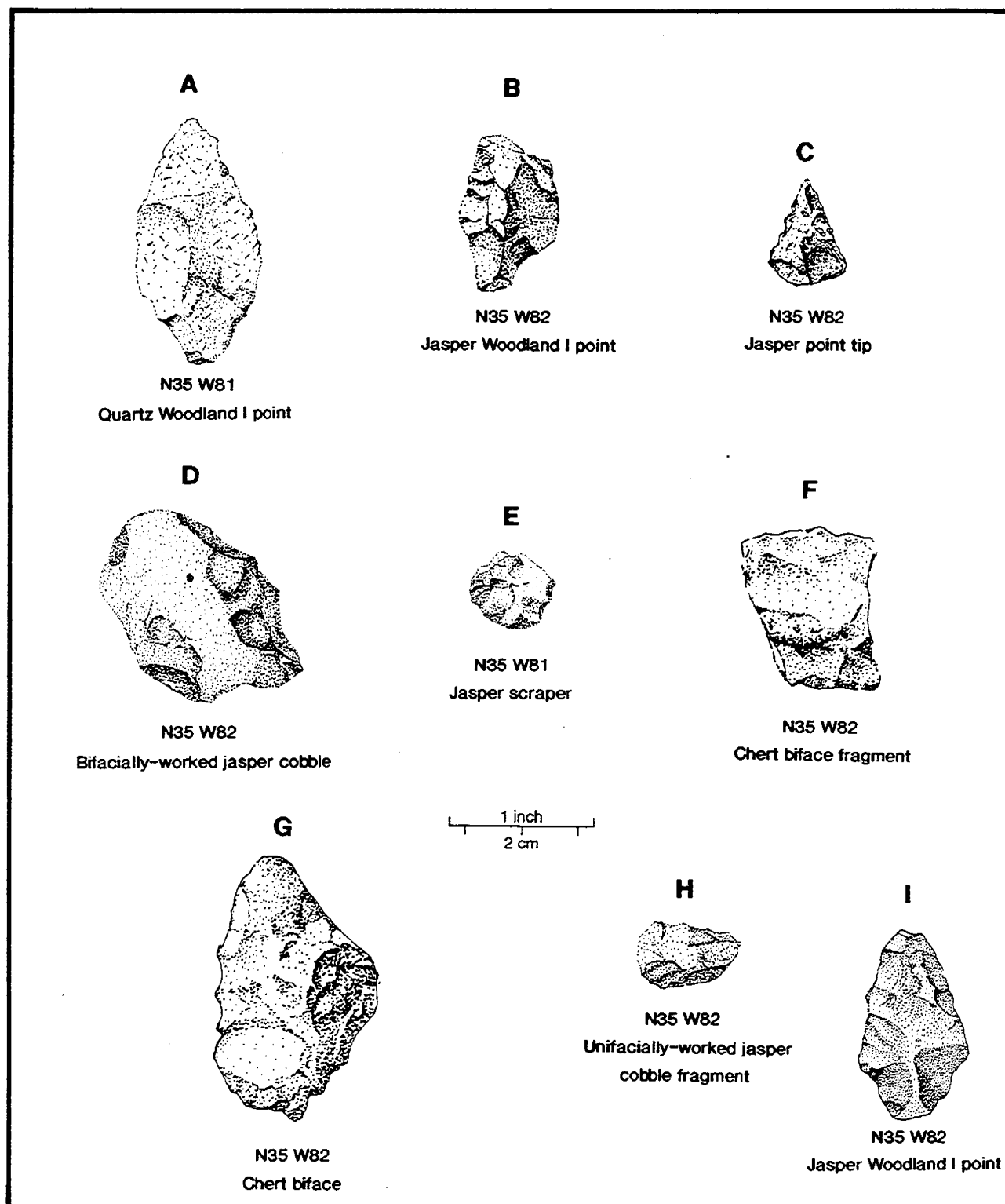


FIGURE 93
Site 7K-C-364 –
Feature 2, Fire-Cracked Rock Concentration

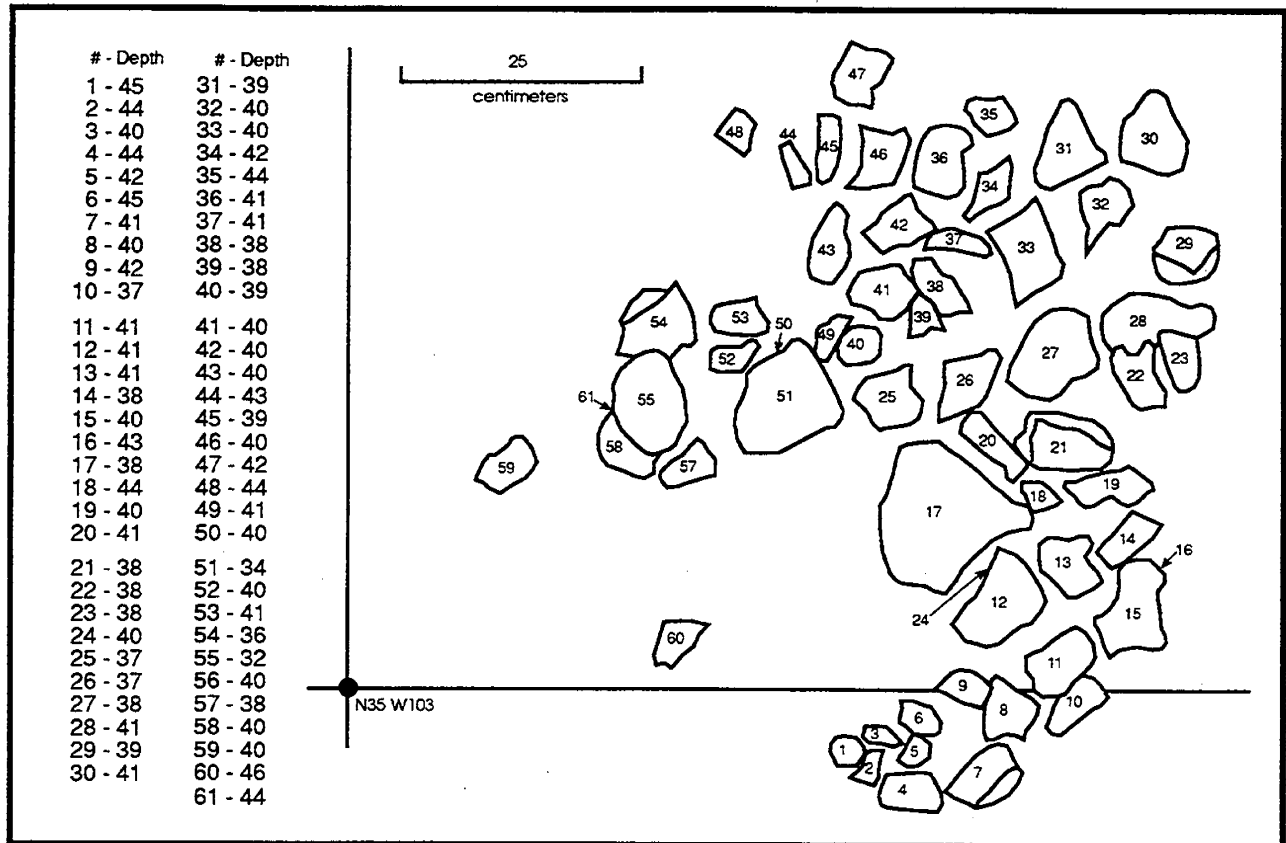


FIGURE 94
Site 7K-C-364 –
Feature 2, West Wall Profile of Test Unit N35W103

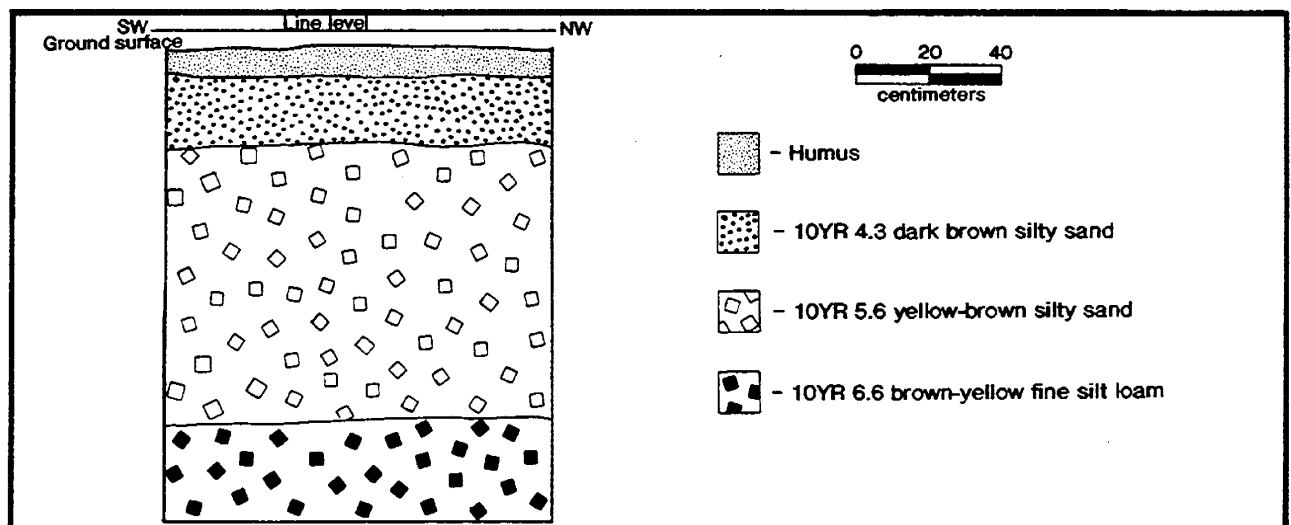
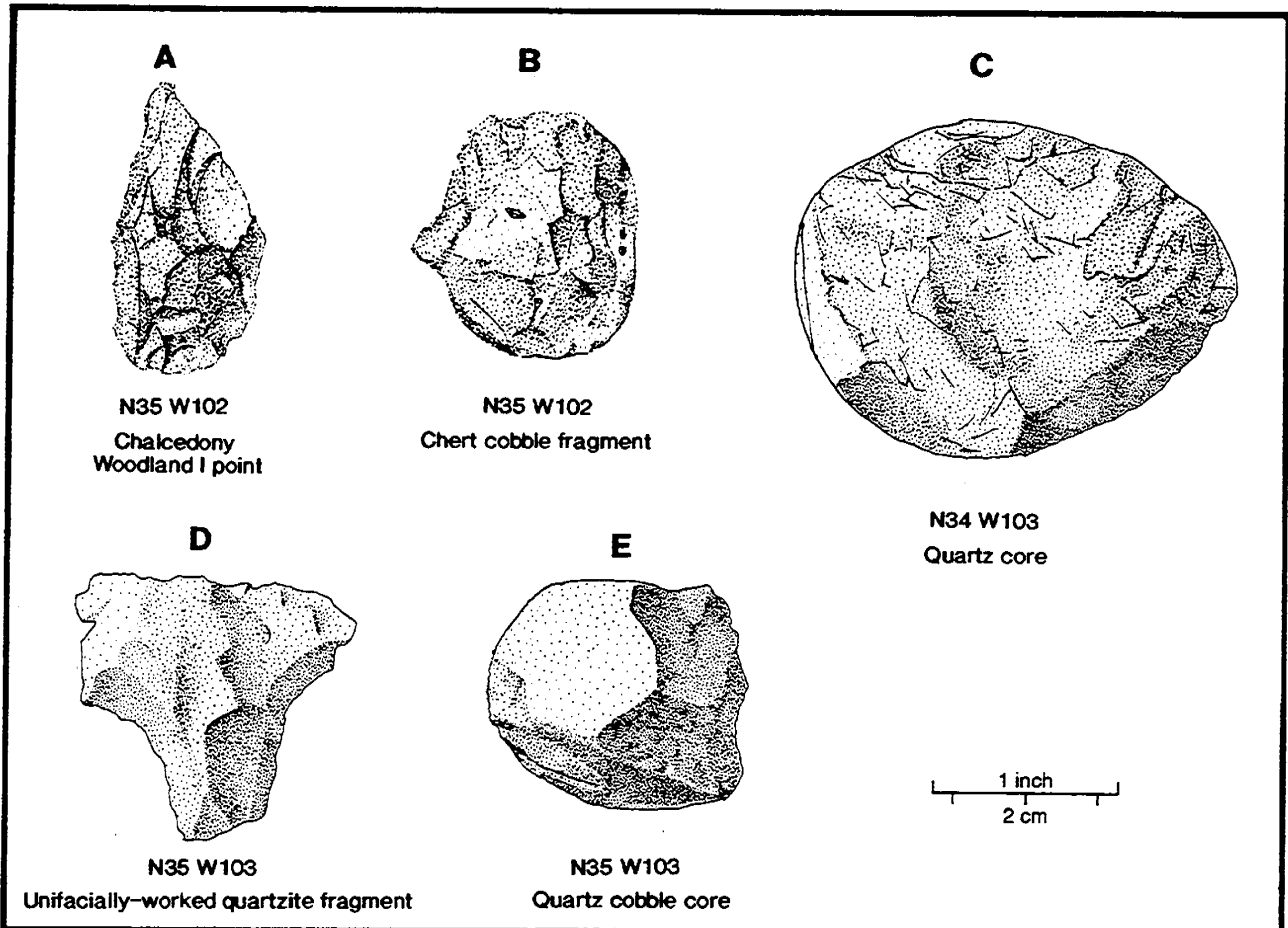


FIGURE 95
Site 7K-C-364 –
Sample of Tools Recovered from Feature 2



was ceased at 33 cm below surface (Figure 94) and continued in arbitrary 10 cm levels. The fire-cracked rock concentration encountered in Level 3 approximately 37 cm below surface extended approximately 9 cm in depth to 46 cm below surface. The concentration appeared to extend east and south; therefore, Units N34W103 and N35W102 were opened up and taken down to a depth of 45 cm below surface. A total of 160 pieces of fire-cracked rock were identified in this concentration. No charcoal was found with the rock cluster although flakes were found stratigraphically above, within, and below the rock feature. No differences in soil texture were noted which made it difficult to discern whether the rocks were resting in a pit or sitting on an old buried land surface. Flakes were found in decreasing frequency to a depth of 125 cm below surface, or about 80 cm below the feature. The soil is quite sandy, which may explain the lack of organic material in the soil and the movement of flakes to a greater depth below the rock feature. The complete absence of charcoal among the rocks suggests that the rocks were removed from a fire and secondarily deposited at this location. This feature produced 255 flakes as well as utilized flakes, shatter, cores, a biface, and four pieces of charcoal/wood (Figure 95). One diagnostic artifact, a chaledony point dating to the Woodland I Period, was recovered from the feature in Level 6 of Test Unit N35W102 (Figure 95-A).

Together, Features 1 and 2 accounted for 49 percent of the total artifacts recovered from the site as a whole, including 49 percent of total flakes and 51 percent of total fire-cracked rock. The cultural association of both features is unknown, but the density and range of artifacts recovered suggests that these features functioned as either trash pits or dwelling-related sites. No other features were identified in this western component of the site.

Although Features 1 and 2 accounted for a significant percentage of total cultural materials, several other areas of the site yielded evidence of prehistoric occupation. Additional diagnostic artifacts include one quartz Woodland I point from Level 2 of Test Unit N35W67 (Figure 96-A) and an argillite Woodland I point from Level 3 of the same unit (Figure 96-B), one jasper Woodland I point from Level 4 of Test Unit N32W102, one quartz Woodland I point from Level 3 of Test Unit N23W103, one quartz Woodland I point from Level 6 of Test Unit N23W91, and one ironstone stemmed point with the tip broken off from Level 4 of Test Unit N35W91 (Figure 96-Z). Other test units and shovel test pits contained a variety of tools, including scrapers, other flake tools, and a hammerstone (Figure 96). Cores and bifaces were also scattered across the site (Figure 97). Furthermore, there were several fire-cracked rocks recovered from Test Units N23W91 and N35W91 in addition to those recovered from Features 1 and 2, and smaller concentrations were found in other areas of the site (Figure 88). Finally, ceramics were recovered from units and shovel test pits in addition to those found in features, including one Mockley from STP N18W79, one Minguannan from Level 2 of Test Unit N31W103, and one Minguannan from STP N45W91.

A wide array of artifacts was recovered from both components of the site (Table 18); however, the assemblage is dominated by lithic debitage which accounted for 77 percent of the total. Finished tools, early stage bifaces, non-diagnostic bifaces, and cores were also represented. Thirty-two percent of the lithic artifacts exhibited cortex, indicating a substantial reliance on local cobbles for expedient needs or to augment prepared tool kits. An attribute test conducted on a sample of 100 cryptocrystalline flakes from the site (Appendix II) failed to indicate a clear preference with regard to lithic utilization practices. Table 19 shows the distribution of attributes for the sample. Results of the test show that in terms of flake type at the site, the overall trend was toward complete flakes which is a general indicator of core reduction. There was, however, also a relatively evenly dispersed representation between proximal and distal flakes, and a slightly lesser number of medial flakes indicating the likelihood that bifaces were also being reduced or refurbished. The sample further shows a greater absence than presence of cortex at this site indicating that early stage biface reduction was not prevalent. However, there is also a strong presence of cortex indicating that there may have been some expedient use of cobbles to supplement prepared tool kits. With regard to flake size, the overwhelming majority of flakes measured less than 15 mm, an attribute more commonly associated with biface reduction. Unfortunately, the values for scar and directions counts were not indicative of either biface or core reduction. In terms of platform shape, there are more round and triangular shaped platforms indicating bifacial reduction and possibly some decortication. There is also a small percentage of flat platforms which are characteristic of core reduction. Therefore, a mixed pattern of lithic utilization from prepared tool kits and supplementary cobble cores is indicated.

Lithic artifacts from this site were also subjected to blood residue analysis using the chemstrip testing method as described by Custer et al. (1988) and the results are summarized in Table 20. The analysis is used to determine the presence of hemoglobin on the tools and the test measures presence or absence of blood but not species. The goal is to use this technique to aid in determining whether animal butchering was conducted at the site. Soil, pebble, and gravel samples were tested to control for the possibility of contamination at the site. Of the 242 tests that were conducted on 81 control samples, 74 samples produced negative results indicating that contamination was not a problem over most of the site area. Five of the soil samples produced some reaction but not a full positive reaction, and two samples produced full positive reactions. Artifacts that came from "contaminated" soils will not be considered. Seven tools from the site and 28 pieces of debitage were tested. The tests were frequently applied to several loci on each artifact, thus a total of 84 individual tests were conducted on the 35 artifacts. Three of the tool samples produced negative results, three of the samples registered some positive response, and one sample produced full positive results. Positive results were obtained from two tests conducted on a utilized flake from Test Unit N6W22. Nineteen of the 28 debitage samples produced negative results, six samples registered some positive response, and three samples produced full positive results. Positive results were obtained from debitage recovered from Test Units N6W43, N27W22, and N35W81. It is apparent then that at least some butchering was being conducted at the site and the positive readings obtained from one tool and three pieces of debitage are not "false positives" resulting from soil contamination.

In terms of the site as a whole, although portions of both components of the site show signs of disturbance from plowing, slope wash, and root and rodent activity, numerous items in the artifact assemblage, including diagnostic artifacts of both the Woodland I and Woodland II periods, were recovered from intact subsurface

FIGURE 96

Site 7K-C-364 -

Sample of Tools Recovered from Across the Site

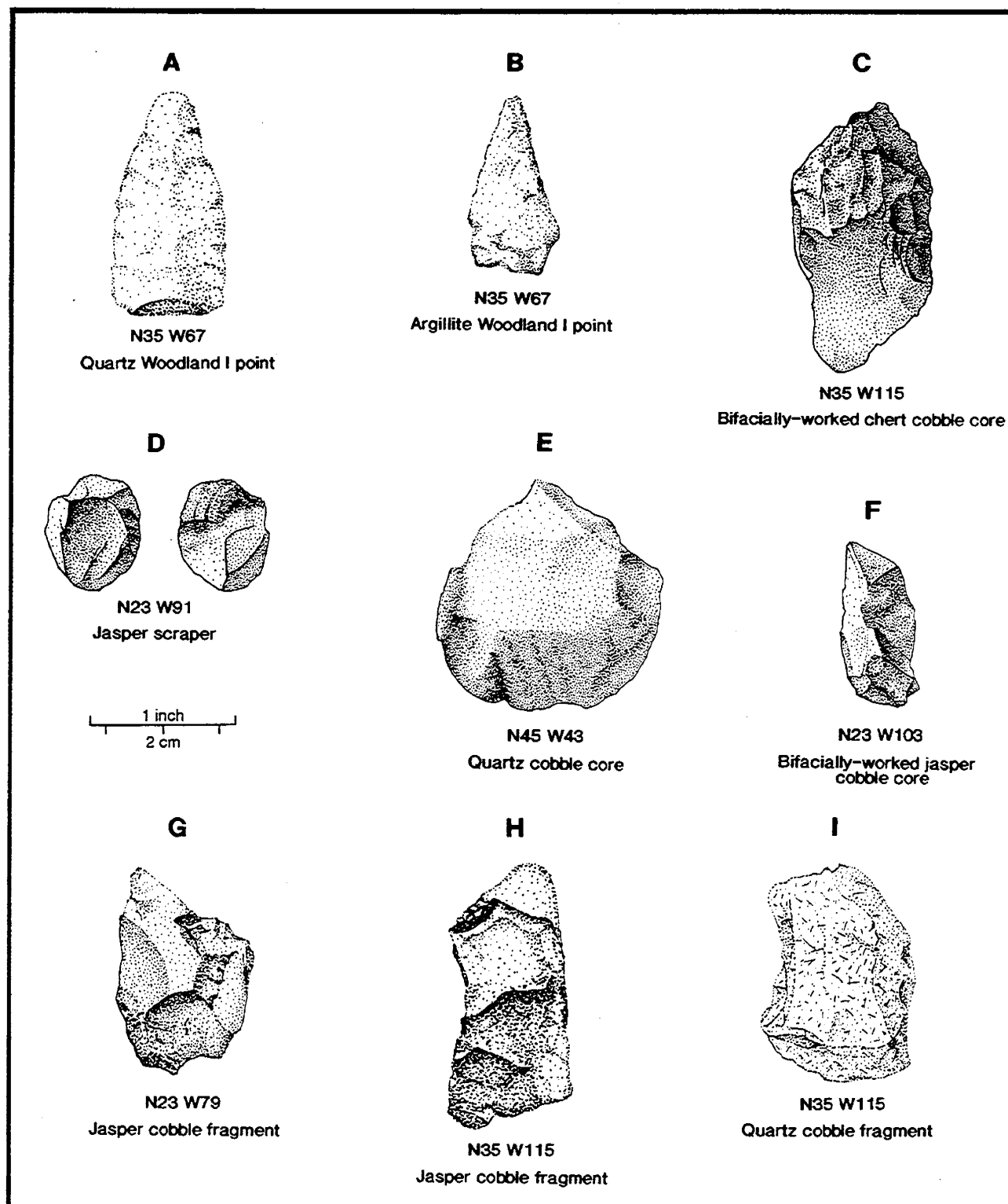


FIGURE 96 continued
 Site 7K-C-364 -
 Sample of Tools Recovered from Across the Site

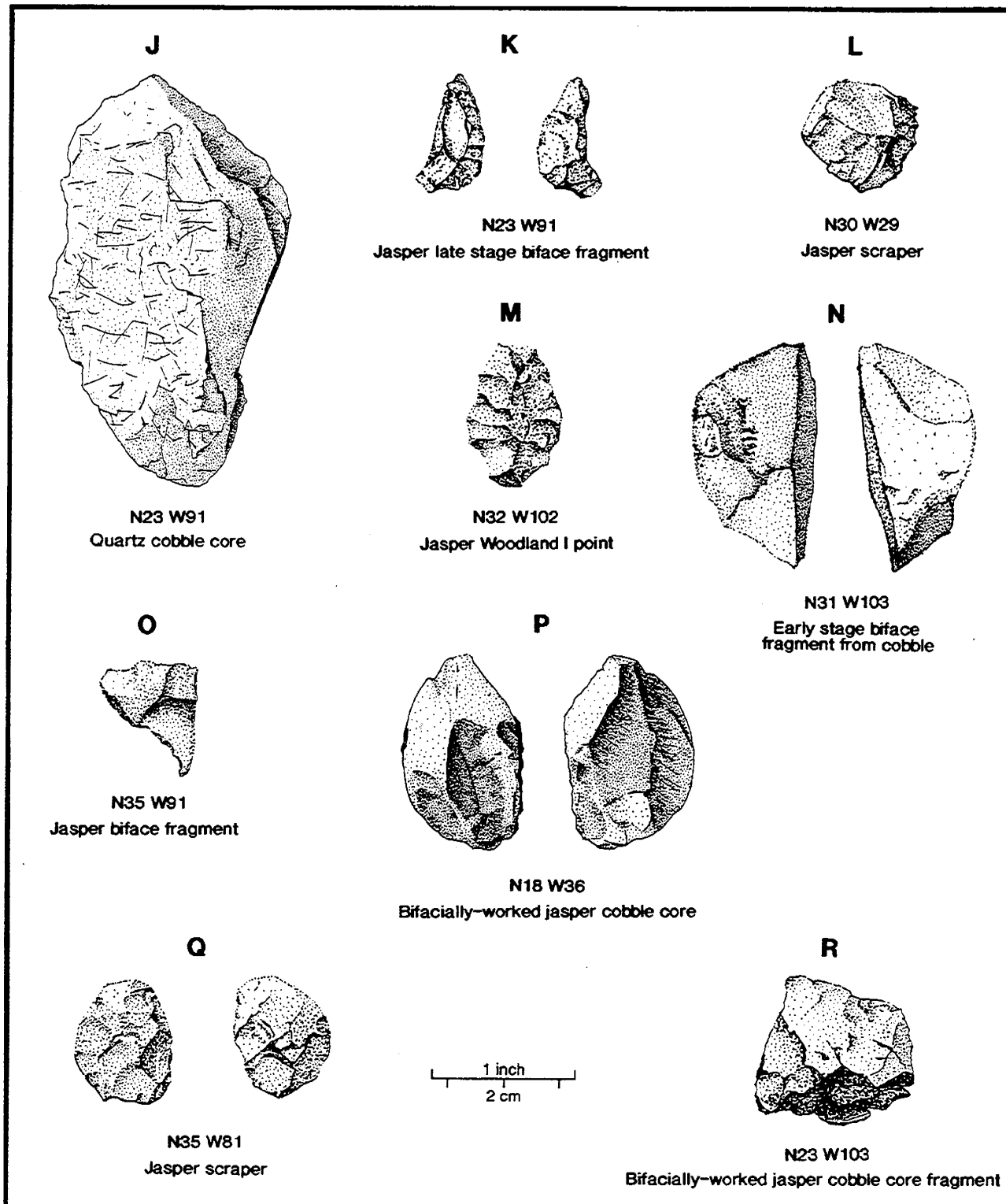


FIGURE 96 continued

Site 7K-C-364 –

Sample of Tools Recovered from Across the Site

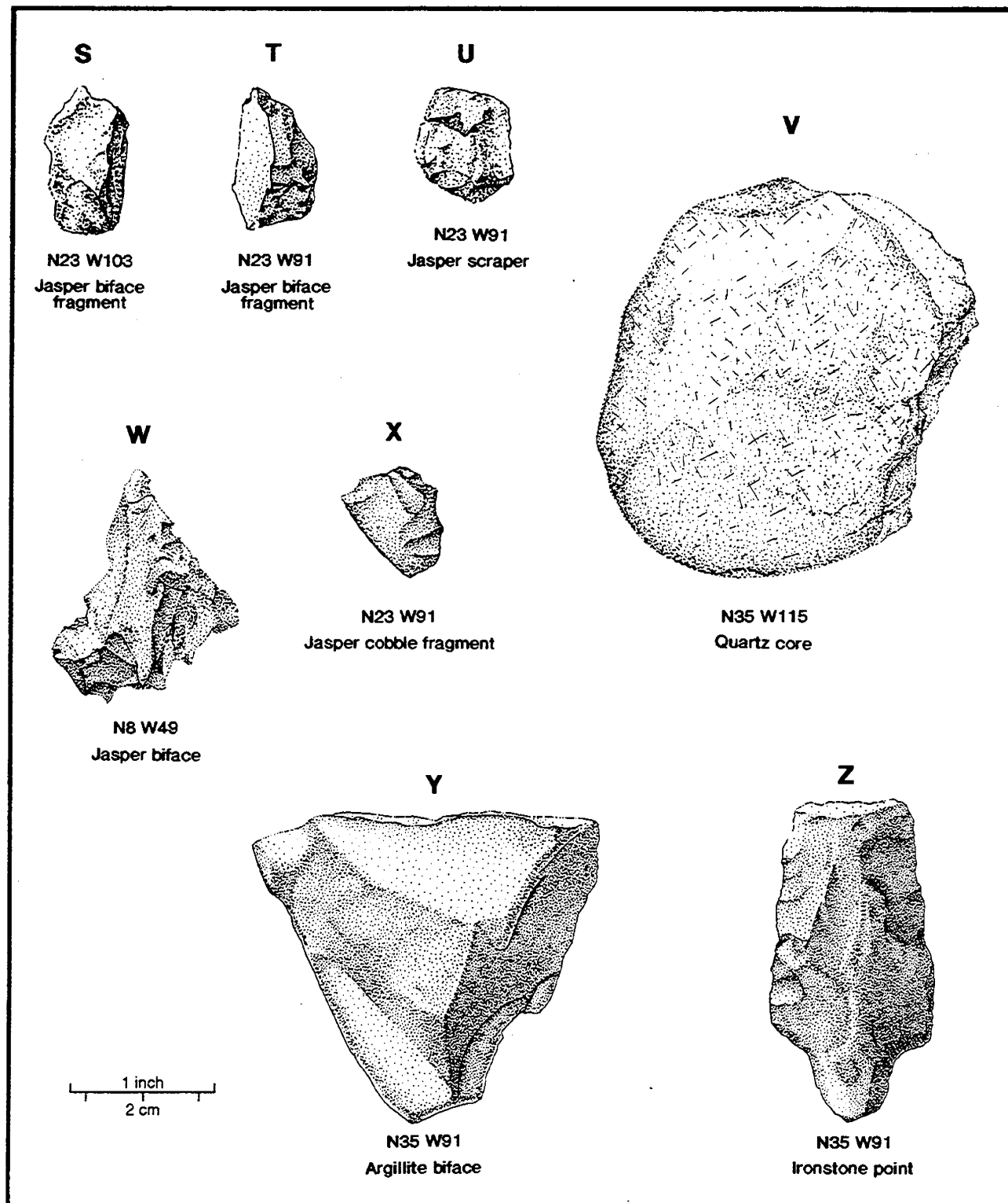


FIGURE 97
Site 7K-C-364 – Distribution of Tools and Ceramics
Recovered from the Western and Eastern Components
of the Site

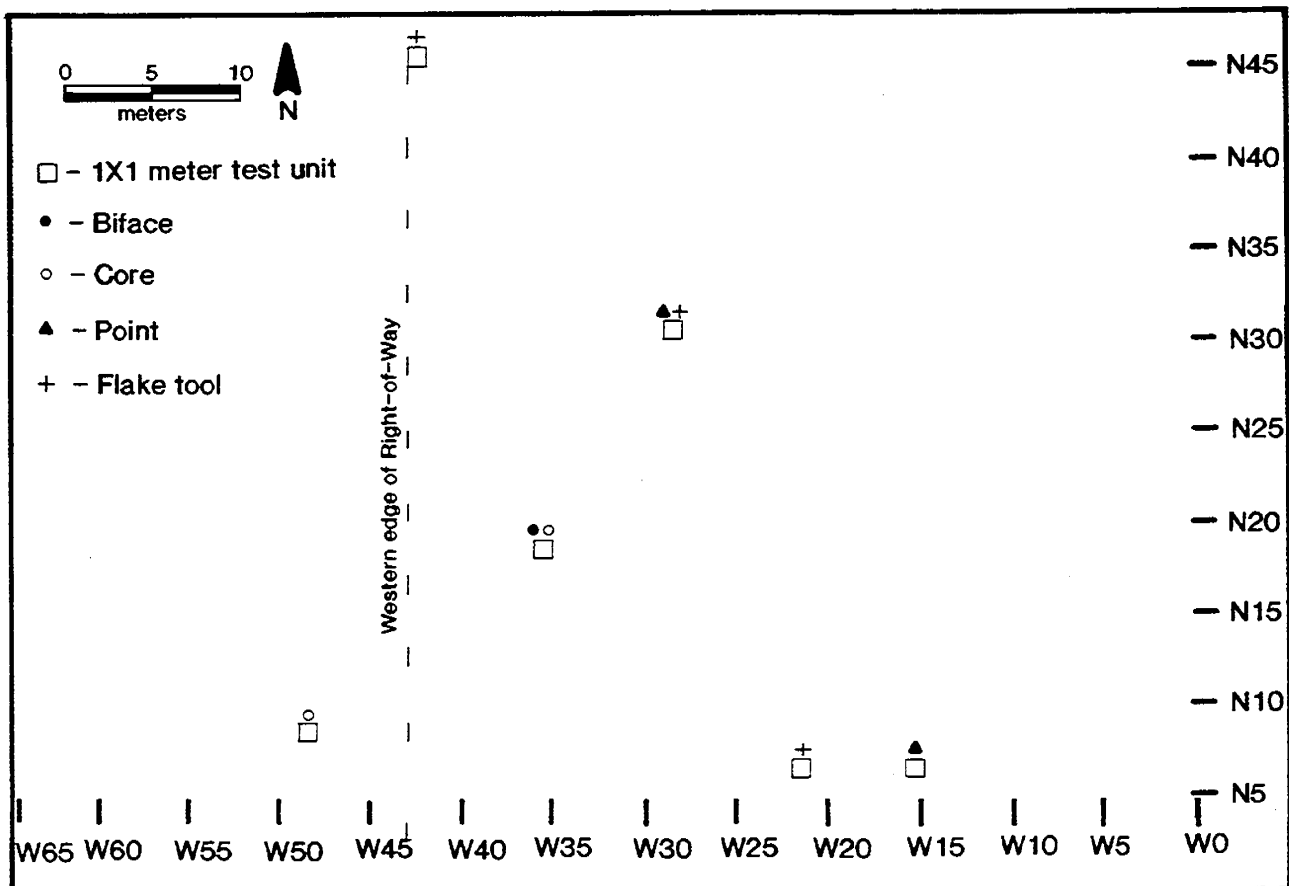
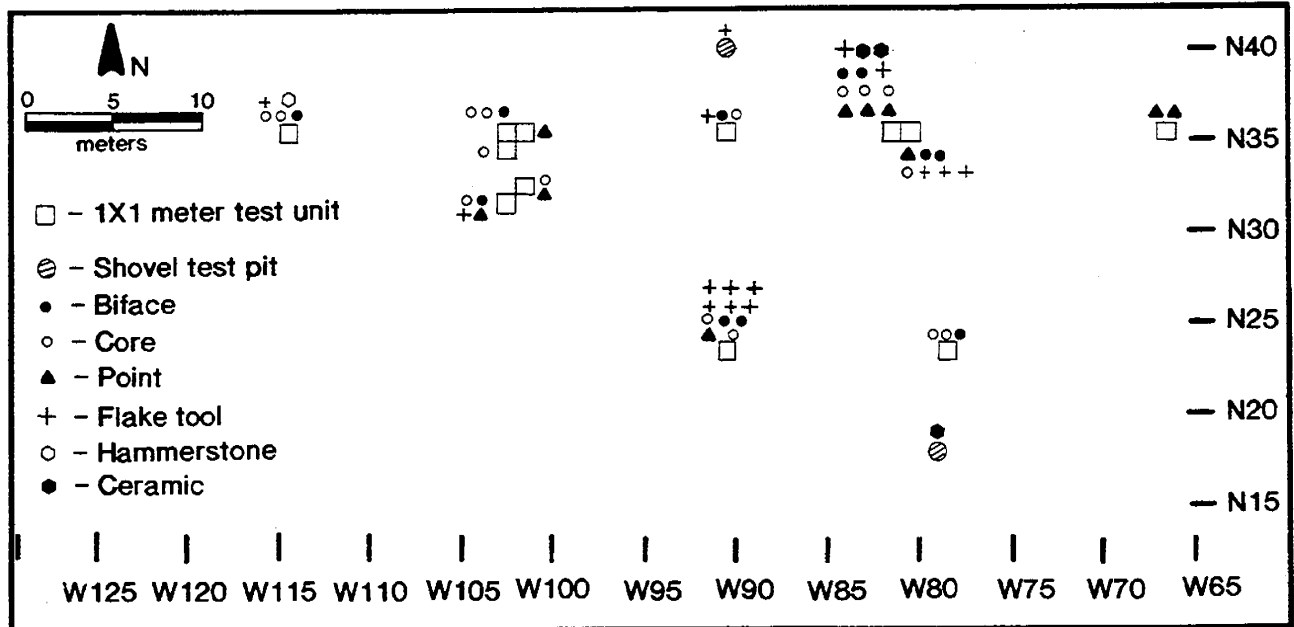


TABLE 19

SITE 7K-C-364 DEBITAGE ATTRIBUTE FREQUENCIES

Flake Type		Platform Shape	
Complete	52	Triangular	25
Proximal	21	Flat	10
Medial	9	Round	38
Distal	18		
Cortex		Remnant Biface Edge	
Present	34	Present	0
Absent	66	Absent	100
Size (cm)		Platform Preparation	
<2	85	Present	5
>2, <5	15	Absent	67
>5	0		
Size (mm)		Scar Count	
<10	13	Mean	= 2.76
>10, >15	52	Std. Dev.	= 1.30
>15, <20	20		
>20, <25	13		
>25, <30	0		
>30, <35	0	Directions Count	
>35, <40	2	Mean	= 2.20
>40, <45	0	Std. Dev.	= .94
>45	0		

TABLE 20

SITE 7K-C-364 SUMMARY OF BLOOD RESIDUE ANALYSIS

Sample Type	Number of Samples	Number of Tests Conducted on all	Number of Samples Showing +Reaction	Number of Samples Showing -Reaction	Number of Samples Showing ~+Reaction
Control (Soils, pebbles, gravels)	81	242	2	74	5
Debitage	28	69	3	19	6
Tools	7	15	1	3	3

contexts. Feature 2, which contained a variety of flakes and tools, including a diagnostic point and a possible hearth, was also situated in good stratigraphic context. The artifact assemblage, though dominated by lithic debitage, also contains a variety of tools indicating that cutting, scraping, cooking, tool reduction, and other such activities were taking place at the site. Although Features 1 and 2 contained a concentration of these items, they are also found in other areas across the site.

This absence of clearly discrete activity areas indicates that this site was probably not a long-term habitation camp, although any inferences regarding the site's function should be considered preliminary. The low incidence of habitation and storage pit features, spatial segregation of tool production activities, lithic caches, and abundant ceramics indicates that the site was probably not a macro-band base camp (Table 14). Instead, the nature of the artifact assemblage and its spatial relationships within the site suggest the probability that 7K-C-364 was a procurement site. Furthermore, the size of the site and the types and quantities of artifacts recovered suggest the possibility of intensive short-term occupations during the span of the Woodland I and Woodland II periods. This data combined with the conspicuous presence and relative quantity of processing tools found in various levels of the site suggests the possibility that 7K-C-364 was a staging/processing type of procurement site. In their analysis of the Hawthorn site in northern Delaware, Custer and Bachman (1984) proposed a local settlement model for the Churchmans Marsh area which offers an explanation of the relationship between procurement related sites and larger base camps. From the relatively sedentary macro-band base camps, or micro-band base camps, work groups composed of adult males and females would make forays to staging/processing sites. From staging/processing sites, individual hunting or gathering parties would make forays to specific resource procurement locales. Game and/or plant foods would be gathered and initially processed at the procurement site for transport back to the staging/processing site. Final processing and possibly initial consumption would be accomplished at the staging/processing site. These activities may have taken several days. Finally, the fully processed resources would be transported back to the main base camp site for storage and final consumption (Custer and Bachman 1984; Custer 1989). It may be that such a settlement model existed in the marshlands of central Delaware during the early Woodland I and into the Woodland II period. The evidence for possible multiple hearths would be explained by the fact that these activities would have taken place over several days, yet the low incidence of deep storage pits and habitation features would be explained by the fact that these relatively short-term habitations took place at no great distance from larger, more permanent camps.

Conclusions and Recommendations

The credible designation of this site as a staging/processing locus rather than a smaller procurement site or micro-band or macro-band base camp would not be possible without further testing of the portion of the site located outside of the proposed right-of-way. Moreover, because prehistoric artifacts were found in good subsurface contexts and because of the potential the site offers in terms of devising a working settlement model for central Delaware for the Woodland period, the western component of the site from W67 to W121 is considered to be potentially eligible for listing on the National Register of Historic Places. Therefore, further testing of this portion of the site west of the current right-of-way would be warranted in the event that any future impact is proposed and it is recommended that a Data Recovery Plan be prepared at that time. However, the component of the site located within the proposed right-of-way from W7 to W55, may have suffered some disturbance from slope wash and a possible historic occupation. This part of the site also contained a relatively low density of cultural materials. Therefore, this eastern component of the site is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

7K-C-366

7K-C-366 is located north of Dover along the proposed right-of-way southwest of Road 88 and northwest of Dover Downs (Figure 2). The site is situated in an agricultural field on a gentle sandy slope draining westward to Muddy Branch and is bounded on the west and northeast by treelines. The poorly-drained soils surrounding the site consist of silty loam soils of the Othello series (Matthews and Ireland 1971). The entire site has been plowed. Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing. The limits of the site and the location of all Phase II tests appear in Figure 98.

FIGURE 98
Site 7K-C-366 – Site Limits and Location of all Phase II Tests Showing Concentration of Prehistoric Artifacts from the Plow Zone

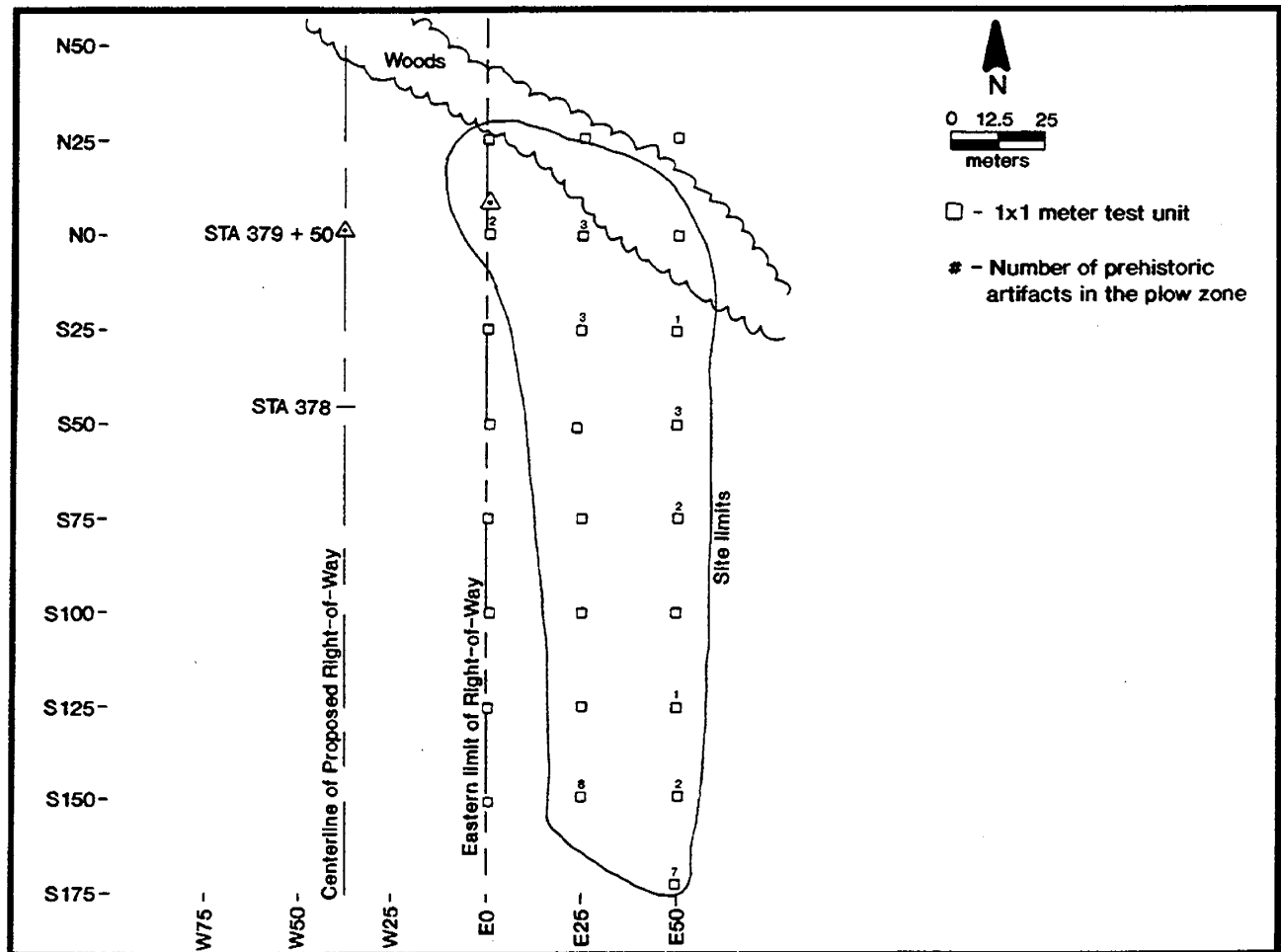
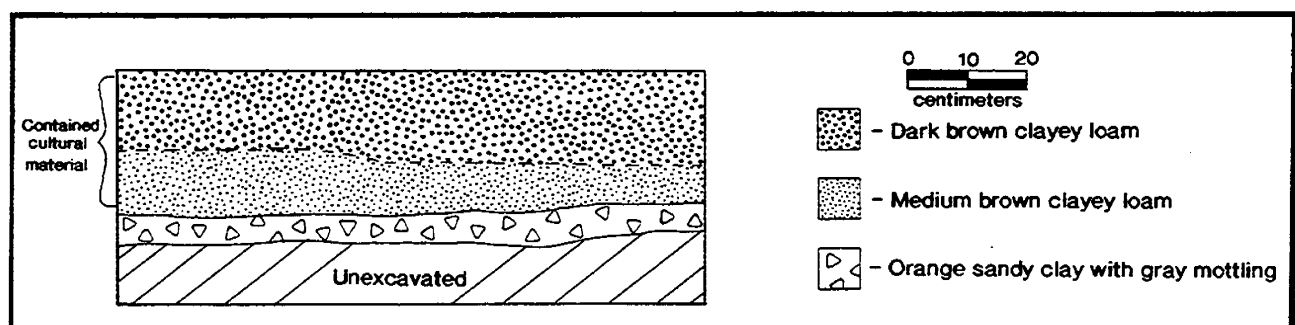


FIGURE 99
Site 7K-C-366 – Representative Profile taken from the West Wall of Test Unit S75E50



Phase I Summary

Phase I testing consisted of a pedestrian survey which located six loci of material culture. These small scatters contained quartz flakes and fire-cracked rocks. Because of the presence of these materials in a desirable physical setting and in order to discern whether and how these sites may be interrelated, it was determined that Phase II testing was warranted (Bachman et al. 1988).

Phase II Results

Phase II testing at 7K-C-366 consisted of 25 1m x 1m test units. The core of the site was determined to be largely confined to the eastern and southern edges of the site along the E50 and S150-S175 lines. The limits of the site and the location of all Phase II tests are shown in Figure 98. Figure 99 shows a representative profile of the site taken from the west wall of Test Unit S75E50.

No prehistoric subsurface features or diagnostic cultural materials were located by the Phase II testing. The overwhelming majority of artifacts consists of flakes, only two of which exhibited cortex. The remaining artifacts include two flake tools, both with cortex, one quartz shatter, three fire-cracked rocks and one non-diagnostic chalcedony biface tip. A total of 36 artifacts were recovered at the site, 89 percent of which were located in the plow zone. The concentration of flakes at the site and the absence of specialized tools, ceramics, and pit or hearth features, combined with the site's location next to a minor drainage, indicates that the site most likely functioned as a procurement locus. At such a site, tool refurbishing would likely have taken place, and a scattering of non-cortex debitage could be expected to dominate the artifact assemblage. Tip fractures, such as the one indicated by the broken biface, commonly resulted from impact produced by hunting activities, and would also be expected among the artifact assemblage.

Conclusions and Recommendations

Since no cultural features or diagnostic cultural materials were located by Phase II testing, it is not possible to place the site in temporal sequence or to provide other criteria that would enable further testing of the research design. Therefore, 7K-C-366 is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

7K-C-365A/B

7K-C-365A and 7K-C-365B are located north of Dover, east of Dover Downs Racetrack, and west of the Dover-Leipsic Road (Figure 2). One of the sites, 7K-C-365A, is a prehistoric site located within the proposed right-of-way (Plate 13). 7K-C-365A measures about 18m x 36m (60' x 120') and is situated atop a knoll alongside Muddy Branch, an easterly flowing tributary of Green Creek and Simon's River, which empty into Delaware Bay approximately 16 km (10 miles) downstream from the site. The knoll measures approximately 50 m x 100 m (164' x 328') and rises from 6.3 m (21.0') to a maximum height of 8.8 m (29.1') above sea level over a distance of 60 m (200'). This degree of elevation change is quite pronounced and is rarely found in central Kent County, Delaware. The long axis of the rise is oriented roughly northeast-southwest and Muddy Branch meanders to within 30 m (100') of the base of the knoll. Muddy Branch is only about 1.5-2.0 m (4-6') wide at this point and originates in swamps no more than 2 km (1.24 miles) north of the site. The stream surface lies at an elevation of 5.8 m (19') above sea level, so the difference between the stream and knoll crest is 3 m (10').

The USDA soil survey of Kent County (Matthews and Ireland 1971, Sheet 13) shows the site as lying in a large expanse of Othello series silt loam, which is characterized as a poorly drained soil on uplands. Native vegetation consists of gum, holly, swamp maple, many species of oak, and other wetland hardwoods (Matthews and Ireland 1971:17). Most of the wet woods surrounding the site, which form the headwaters of Muddy Branch, are underlain by this soil type. The soil survey, however, was not discriminating to the point where it could discern small rises like that at 7K-C-365A, which appears to have soils similar to the Sassafras series found in nearby agricultural fields. Sassafras soils are well-drained sandy and sandy clay loams on uplands which support mixed deciduous forests (Matthews and Ireland 1971:23).